A Dissertation On

TO DETERMINE THE EFFICACY OF BACK-SHU POINT MASSAGE AND CLINICAL ACUPUNCTURE IN CHRONIC ASTHMA – A RANDOMIZED CONTROL STUDY

Submitted By

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I, Dr.G.NITHYA KALA, solemnly declare that dissertation titled "**TO DETERMINE THE EFFICACY OF BACK-SHU POINT MASSAGE AND CLINICAL ACUPUNCTURE IN CHRONIC ASTHMA – A RANDOMIZED CONTROL STUDY** "a bonafide and genuine research work carried out by me at Government Yoga & Naturopathy Medical College & Hospital,Chennai from July 2016 – June 2017 under the guidance and supervision of Dr. R. S.HIMESHWARI, Head of the Department, Department of Acupuncture and Energy Medicine, Govt. Yoga & Naturopathy Medical College & Hospital, Chennai. This dissertation is submitted to The Tamilnadu Dr. M.G.R. Medical University towards partial fulfillment of requirement for the award of M.D. Degree (Branch – III) in Acupuncture &Energy Medicine.

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Place :Chennai.

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DR.G.NITHYA KALA

ABBREVIATIONS

PARTICULAR	ABBREVIATION
Asthma Quality of life questionnaire	**AQLQ**
world health organisation	**WHO**
Peak flow meter	**PEF**
Forced expiratory volume in one second	**FEV1**
Tumour necrosis factor	**TNF-B**
Interluekin	**IL**
gastroesophageal reflux disease	**GERD**
Non-steroidal anti-inflammatory drugs	**NSAIDS**
Traditional Chinese medicine	**TCM**
Randomized control study	**RCT**
Urinary bladder	**UB**
Spinal manipulation therapy	**SMT**
Vital capacity	**VC**
Forced vital capacity	**FVC**

Ribonucleic acid	**RNA**
Bronchial hyperresponsiveness	**BHR**
Conception vessel	**CV**
Stomach channel	**ST**
Complementary and integrative medicine	**CIM**
Cervical vertebra 7	**C7**
Thoracic vertebra 5	**T5**
Out patient	**OP**
Inpatient	**IP**
Lung channel	**LU**
Kidney channel	**KI**
Pericardium channel	**PC**

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ABSTRACT

AIM AND OBJECTIVE: To provide reliable clinical evidence for the efficacy of Backshu Point Massage and Acupuncture in treating chronic asthma by using Peak flow meter and Asthma Quality of life questionnaire(AQLQ).

BACKGROUND: Bronchial Asthma is a non-infectious chronic, inflammatory disorder of the airway affecting both adults and children in all parts of the world. The world health organization (WHO) estimated around 334 million people in all ages were affected and that more than 15 million disability –adjusted life-years are lost and 250,000 asthma deaths occur around the world annually. Asthma is diagnosed by various symptoms of wheeze, shortness of breath, cough, tightness of chest, and variable expiratory airflow limitations.

Inhaled corticosteroid therapy and bronchodilators are predominantly used medication to treat asthma. But controversy exists about the risk and benefits of using bronchodilator drugs and corticosteroids .So due to the long term use of conventional drugs causing possible side effects, alternative, no risk, non-drug strategies treatment like backshu point massage and acupuncture can be used to reduce the side effects and to improve the lung function for the management of asthma.

DESIGN AND METHOD: 60 chronic asthma subjects were randomized into Control Group A (Acupuncture; N = 30) and Study Group B (Acupuncture and Backshu Point Pressure; N= 30) on 1:1 ratio. The Subjects of Group A and Group B received their respective treatment one day. Data was collected before and after

treatment using Peak flow meter for PEF And FEV1 Value- and Asthma Quality and Life Questionnaire (AQLQ) .

RESULTS: There was evidence of changes in improvement of pulmonary function on comparing between acupuncture group and acupuncture cum backshu group. Within the acupuncture group showed significant change in the quality of life done using Mini AQLQ (0.001) shown in Table 1. Also shows a significant increase in the PEF ($p<0.006$) and FEV1 ($p<0.02$) in acupuncture group. In the acupuncture cum backshu group significant changes are noted in the post study in quality of life ($p<0.001$) and in the PEF ($p<0.001$) and FEV1 ($p<0.004$) values. Duration of conducting the intervention is a key factor in showing positive changes in the results.

CONCLUSION: This trial suggested that both Acupuncture and Backshu point pressure are better in reducing asthmatics.

KEY WORDS: Chronic asthma, Acupuncture, Backshu point pressure, AQLQ, PEF, FEV1.

INTRODUCTION

Bronchial Asthma is one of the chronic inflammatory disorder of the airways which is associated with airway hyper responsiveness that can lead to episodes of recurrent wheezing, breathlessness, chest tightness and coughing particularly at night and in the early mornings [1]. Around 300 million people worldwide suffer from asthma and the prevalence is increasing. The overall burden of Asthma in India is estimated to be more than 15 million. Primary deterrence includes creating a productive environmental background, leading healthy life-style, elimination of environmental pollution factors. In a study conducted by Rai et al 30 years ago, prevalence of asthma was reported to be 2.78% in an urban population aged 30-49 years [2].

Table 1: demographic pattern

Demography pattern	Number (%)
Gender	
Male	122 (80.8)
Female	29 (19.2)
Residence	
Urban	98 (64.9)
Rural	53 (35.1)
Socioeconomic status	
Upper	11 (7.3)
Middle	84 (55.6)
Lower	56 (37.1)
Smoking status	
Smoker	39 (25.8)
Nonsmoker	112 (74.2)
Diagnostic status	
Newly diagnosed	111 (73.5)
Previously diagnosed	40 (26.5)

According to Aggarwal et al in 2006, the asthma prevalence was found to vary from 4.3%– 6.9% in the Indian population. In adults, Clinically diagnosed asthma reported to be 2.7 to 4.0% in most of the European countries, while in England and US, it is to amount 12% and 7.1 respectively [4]. In Australia, the prevalence is comparatively very high subjected to (9.5 to 17.9%) [Ortega A N et al, 2002]. According to Tristan da Cunha where more than half of the population (56%) were asthmatics, so supporting a strong genetic association [5]. Prevalence of asthma is higher in women than men, and in black versus white persons [6-8]. Moreover, mortality is higher for asthma in adults than children, and 30% higher for women than men, and 75% higher for black than white persons [9].

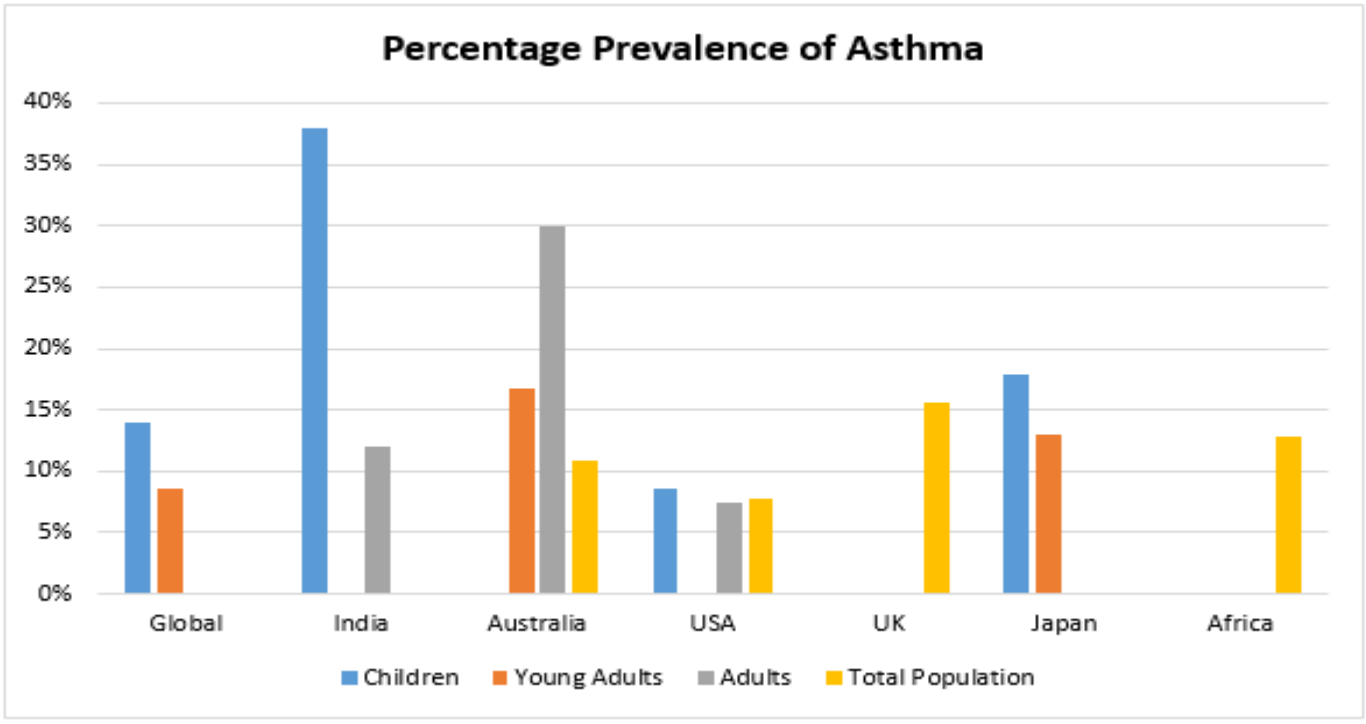


Figure 1: Percentage of prevalence of asthma worldwide

The association between atopy the propensity to produce IgE in response to allergens and asthma is recognised. Allergens are house dust, cats, cockroaches, mites, dogs, and fungi and a few cases of occupational asthma. Aspirin can also cause asthma through by production of cysteinyl leukotriene. In exercise induced asthma, hyperventilation causes water and heat loss of the airway lining fluid, and also triggering mediator release. In persistent asthma, there is chronic invasion of inflammatory cells those that are interacting with the airway structural cells, and the secretion of chemokines, cytokines, and growth factors. Induced sputum samples of asthmatics exhibit, though eosinophil usually dominate, neutrophilic inflammation prevails in few patients, while, so called 'pauci-granulocytic' asthma. While there is increase in severity and chronicity of asthma, airway remodelling occurs, with fibrosis and fixed narrowing of respiratory airways and a reduction in bronchodilator response. **Table 2**:Asthma relief medication.

Long-term medication	**Quick term relief medication**
Corticosteroids	Beta-agonists
Long Acting Beta-agonists	Anticholinergics
Combination Inhaled Corticosteroids	Beta-agonists combination Anticholinergics
Leukotrienes	
Mast cell stabilizers,& theophylline	

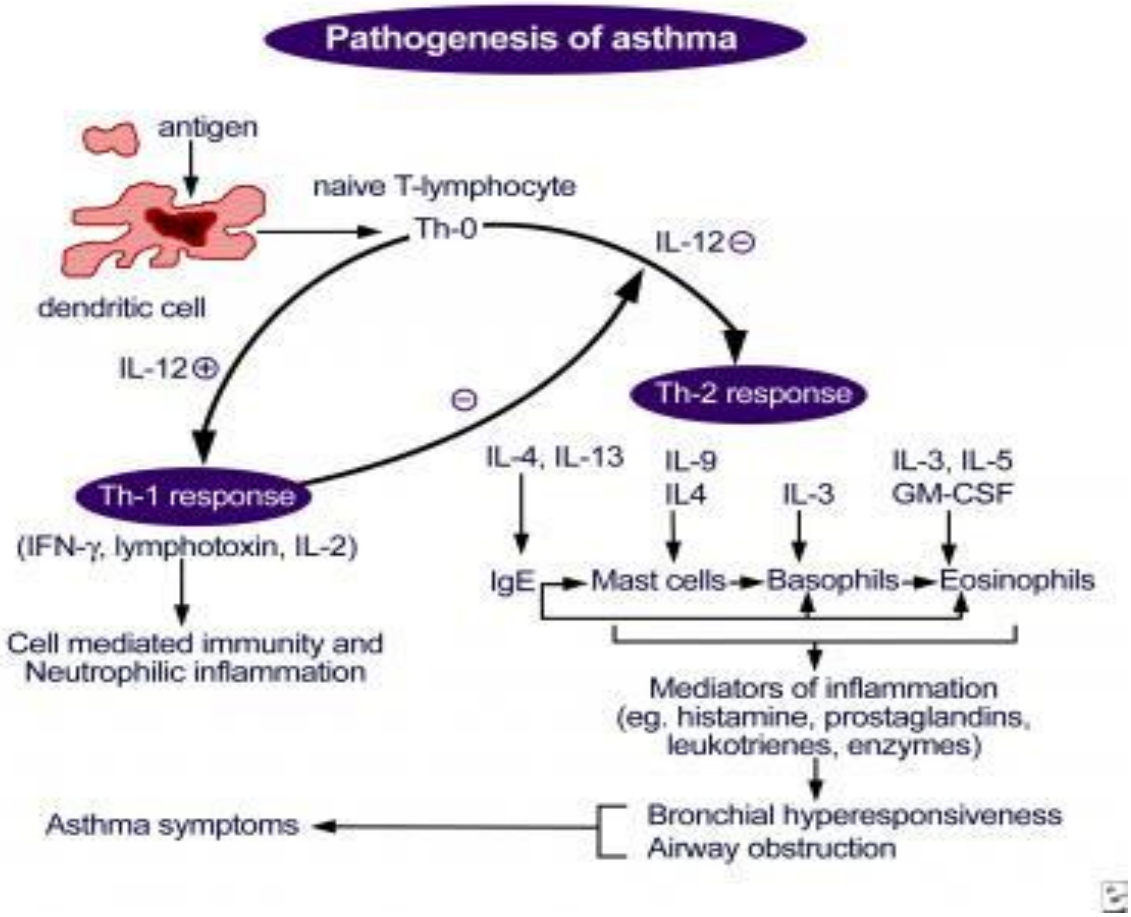


Figure:2–Pathogenesis of asthma

The possibilities for developing asthma is depends on complex interaction of genetic and environmental factors. Risk factors like genetic predisposition (family history of asthma or atopy); air pollution exposure to allergens; infections (respiratory tract infections, caused by respiratory syncytial virus); perinatal factors (low birth weight and prematurity); bad diet, tobacco smoking; and obesity (10).Some of the differences may in the surroundings exposures and health care basic infrastructure in the country while some other causes could be actually genetic or ethnic in origin [11].

The pathophysiological features of bronchial asthma are bronchial obstruction (due to bronchial muscle constriction, excessive airway secretions and mucosal oedema) and inflammation of the airways. The pathophysiologic origin of asthma is not yet well understood. It has a multifactorial etiology resulting from an interplay of hereditary factors and environmental factors. Bronchial biopsies from asthmatics with even mild condition have indication of chronic inflammation, cytokines and inflammation of other mediators are found in asthma patient's bronchial wash. People from some families are more prone to develop allergies, and it is quite well-known relationship between allergies and asthma. So it is suggested there is a genetic predisposition, but it appears to be involvement of numerous genes.

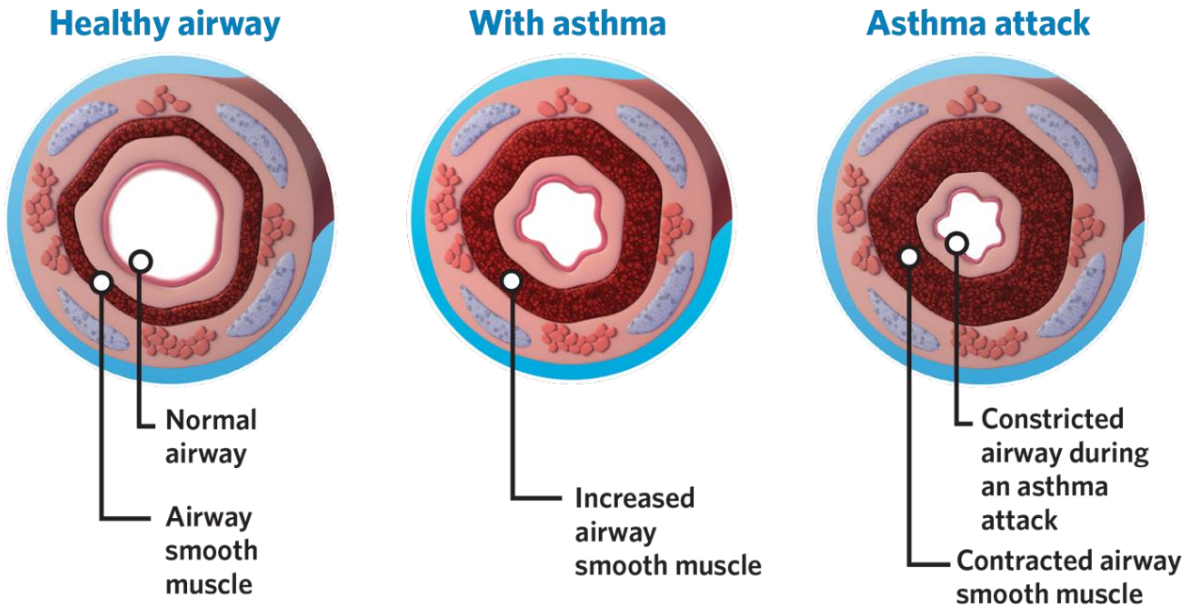


Figure:-3 Airways of healthy and asthma .

Allergic reactions are always mediated by IgE class antibodies. People prone to IgE-mediated allergic reactions are "atopic, means they are genetically predisposition to produce IgE antibodies in response to some allergens. T and B lymphocytes have sensitive role in production of IgE when allergic reactions are mediated through IgE Antibodies. There are two kinds of T helper cells (Th lymphocytes) designated Th1 and Th2. Th1 cells promote cell-mediated immune responses by creating interleukin-2 (IL-2), interferon-gamma, and TNF-β, when Th2 cells Stimulate the production of IgE antibodies by IL-4 and IL-13 production, that are interleukins which act B lymphocytes (B cells) to stimulate the production of IgE antibodies for a specific antigen. People prone to develop allergies, i.e., atopic people, have a higher ratio of Th2/Th1 cells, and this is an important factor in tendency to create allergy-mediating IgE antibodies. This observation is clearly relevant to asthma, as biopsies of the bronchial mucosa of asthmatics have an increased activated Th2 cells. So some authors make these observations to say that there is an imbalance in Th2/Th1 which plays a crucial role in the development of allergies like asthma.

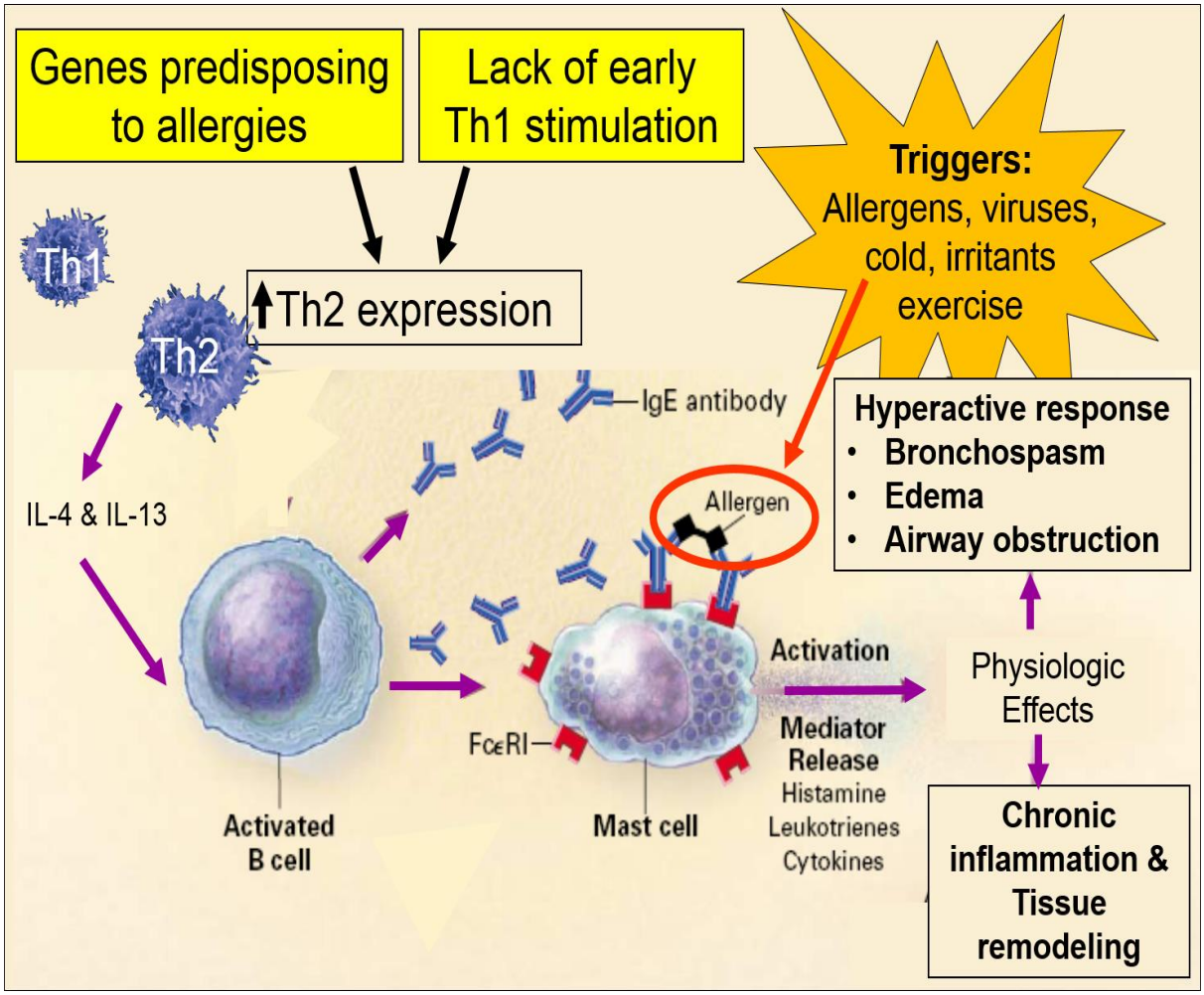


Figure:4 Trigger factors for asthma.

Image adapted from: Busse W. & Lemanske R: N. Engl. J. Med. 2001;344(5):350-362

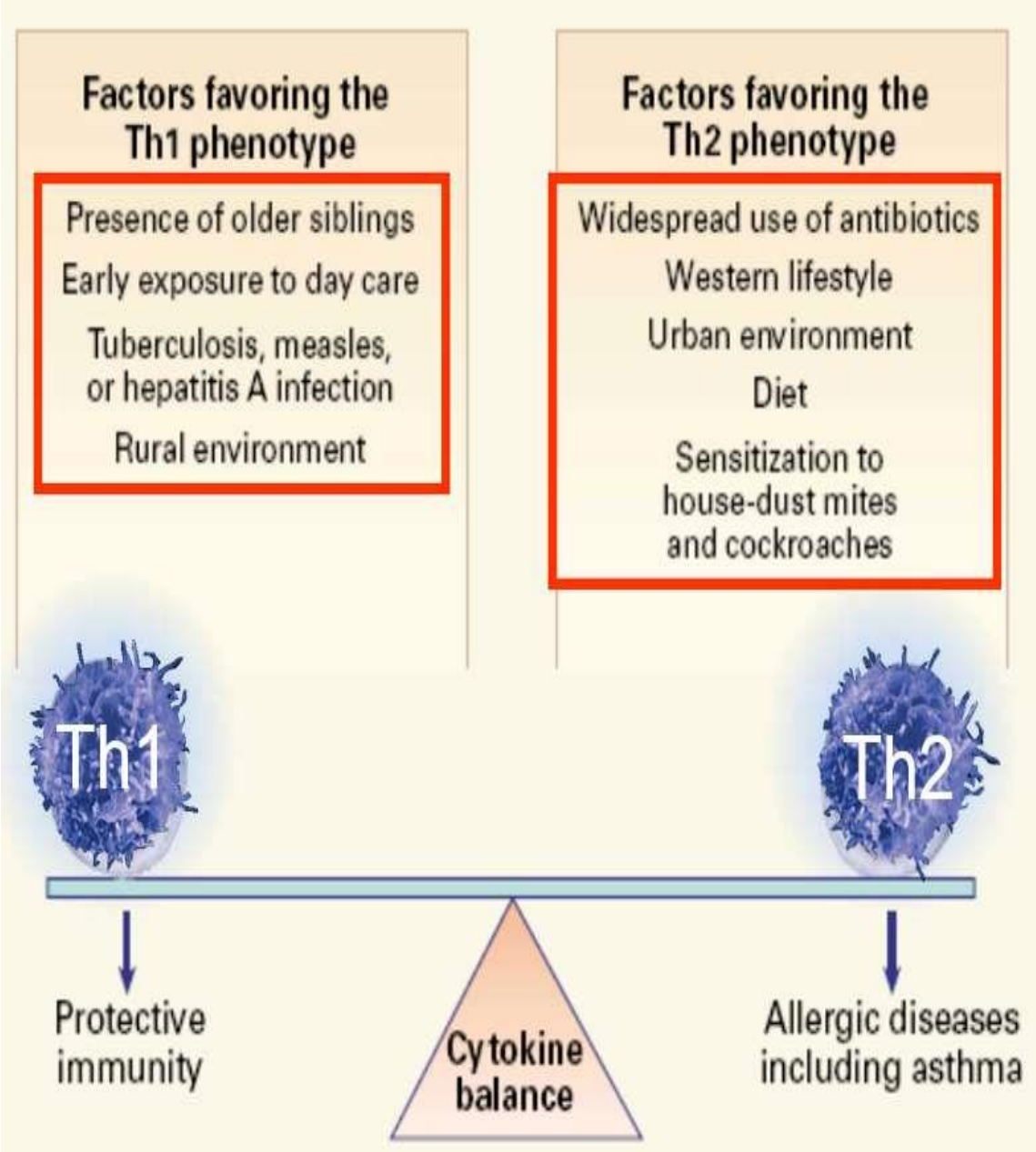


Figure:-5 Th1 and Th2 factors.

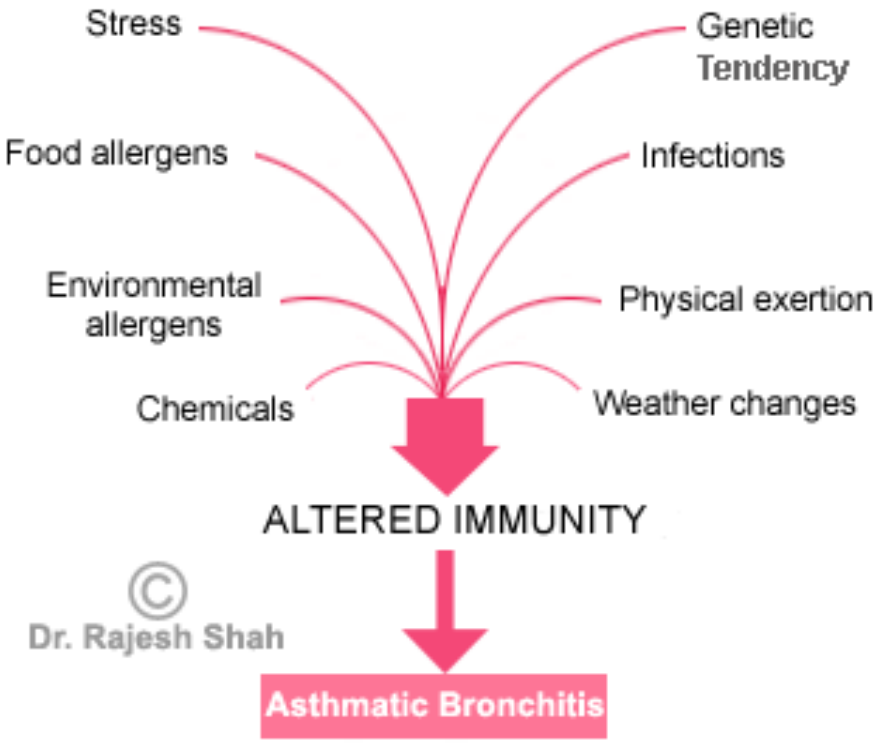


Figure :-6, etiology of asthma

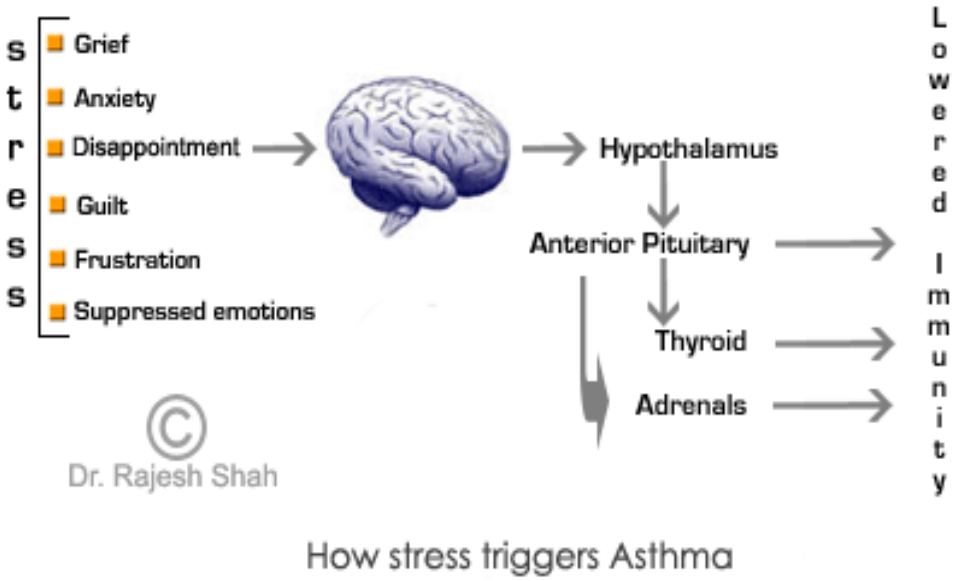


Figure 7:-Stress asthma

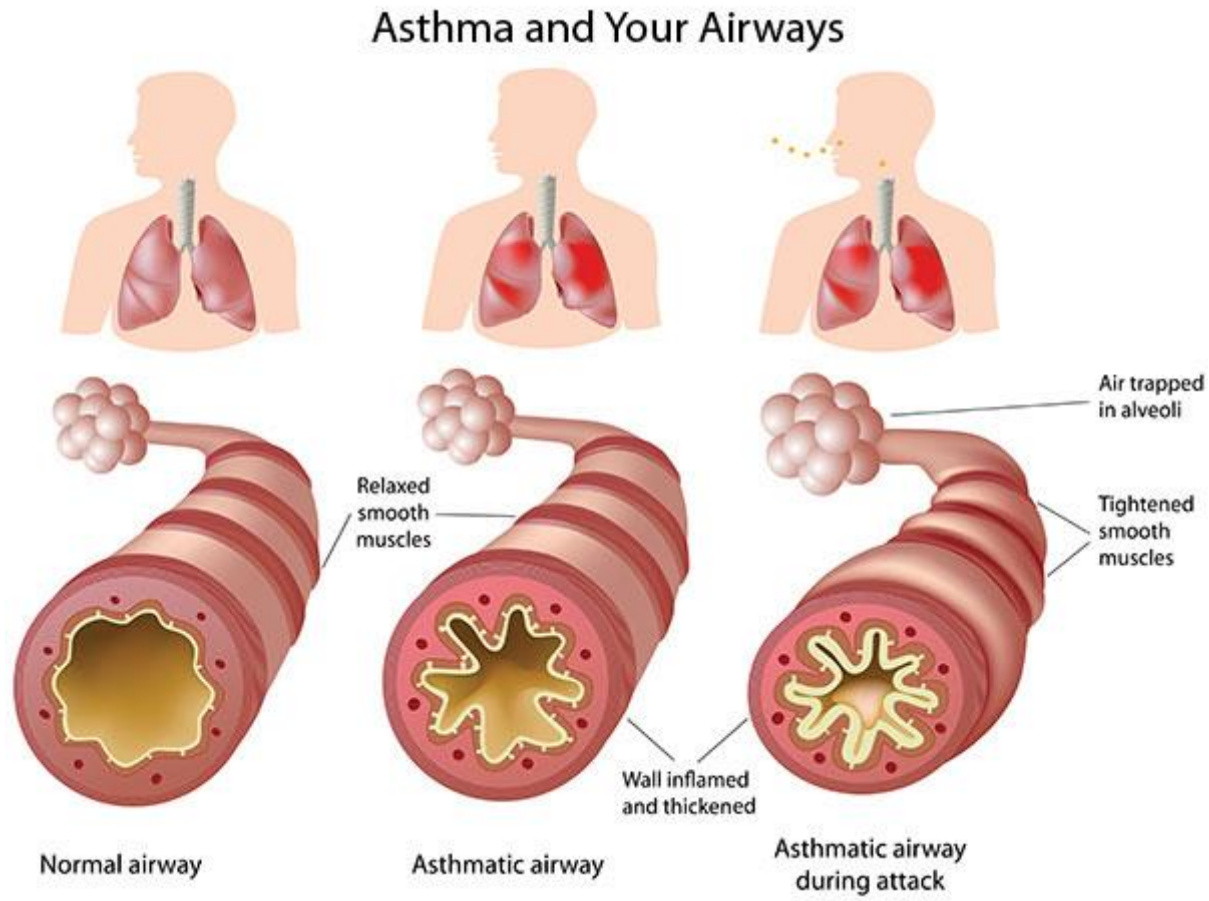


Figure:8- Air way obstruction.

Factors which implicates in triggering of asthma. The common Allergens are:

- Inhaled: pollen grains, dust, mites, molds, animal hair or dander, cockroach allergens ,Weather: Cold and cool air, wind, rain, and sudden changes of the Climate can cause asthma in some people ,Air pollutants & irritants: paint fumes, smog, aerosol sprays & even perfume,

- Ingested: e.g., shellfish, Tobacco smoke (active or passive): a common trigger, Exercise/activity: can trigger asthma also laughing, crying, holding breath, and hyperventilation,Medications,Sinusitis,Respiratory Tract Infections: includes flu & common cold (Flu shots would decrease hospitalizations from asthma.),
- Sulfites —like preservatives added to adulterate some perishable foods,
- Emotional and mental stress,GERD (gastroesophageal reflux disease): aspiration of gastric juice or regurgitation of bile acids, Some occupational exposures to chemicals and irritants.

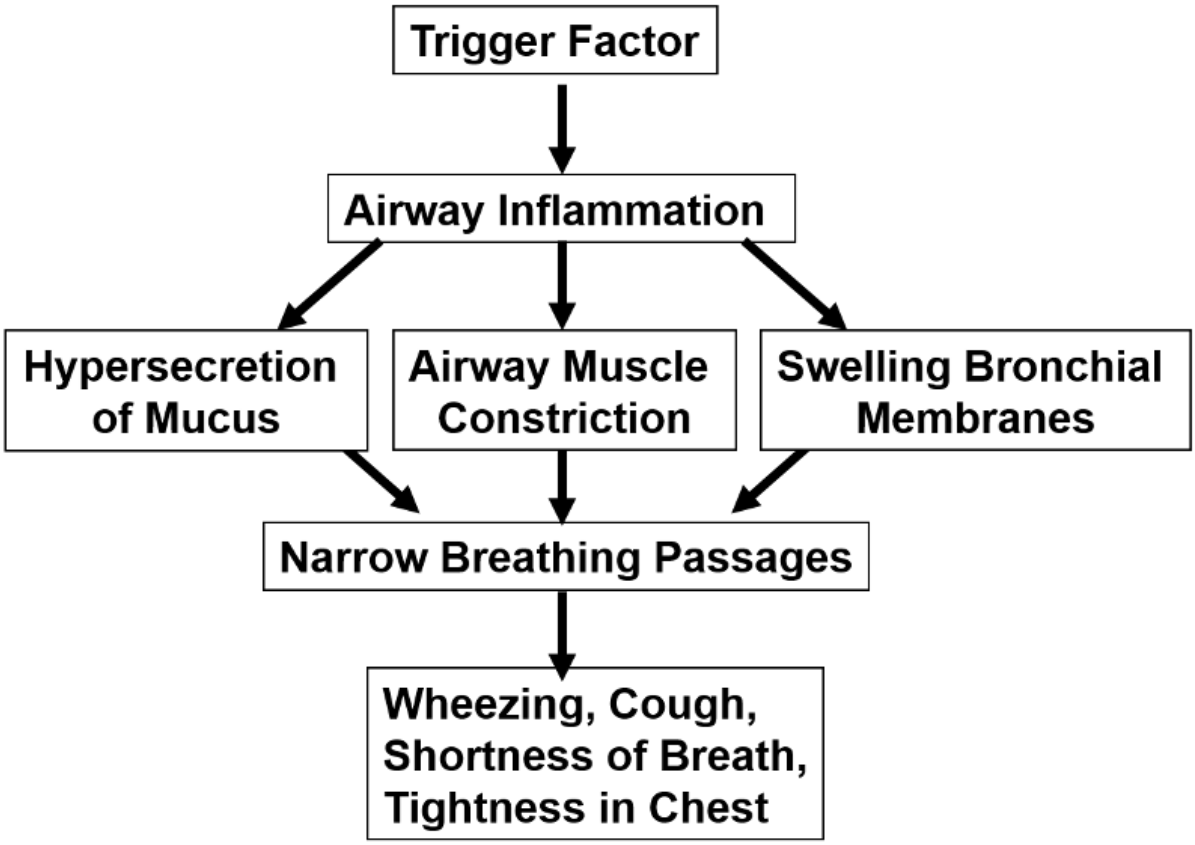


Figure :-9,Trigger factor

CLINICAL FEATURES

Typical symptoms like frequent episodes of wheezing, chest tightness, breathlessness and cough. In mild to intermittent asthma, patients may seem to be asymptomatic between exacerbations. In persistent asthma, the pattern is of chronic wheeze and breathlessness.

Symptoms & Signs are like Barrel chest, Cough Particularly at night times, Indrawn costal margins in chest region, Use of accessory respiratory muscles, Thick sputum production, High pitched wheeze, Pulsus paradoxus, Anxiety, Ala flaring of the nostrils [from Haslett et al. (2003); Canaday and Collins (2004)].

Table :3-Stages of Asthma.

Chronic mild asthma	**Chronic moderate asthma**	**Chronic severe asthma**
Cough	Cough	Cough
Tight chest	Tight chest	Tight chest
Wheeze for 2-4 weeks	Wheeze for >4 weeks	Continuous wheeze
Night symptoms for 2-4 months.	Night symptoms for > 4 months.	Frequent night symptoms.
PEF > 80%.	PEF 60-80%	PEF < 60 %.

Symptoms may be aggravated sometimes by: Strenuous Exercise, Cold weather, Allergens like (e.g. pets, occupational), respiratory tract infections, Drugs (β-blockers, aspirin and NSAIDs).

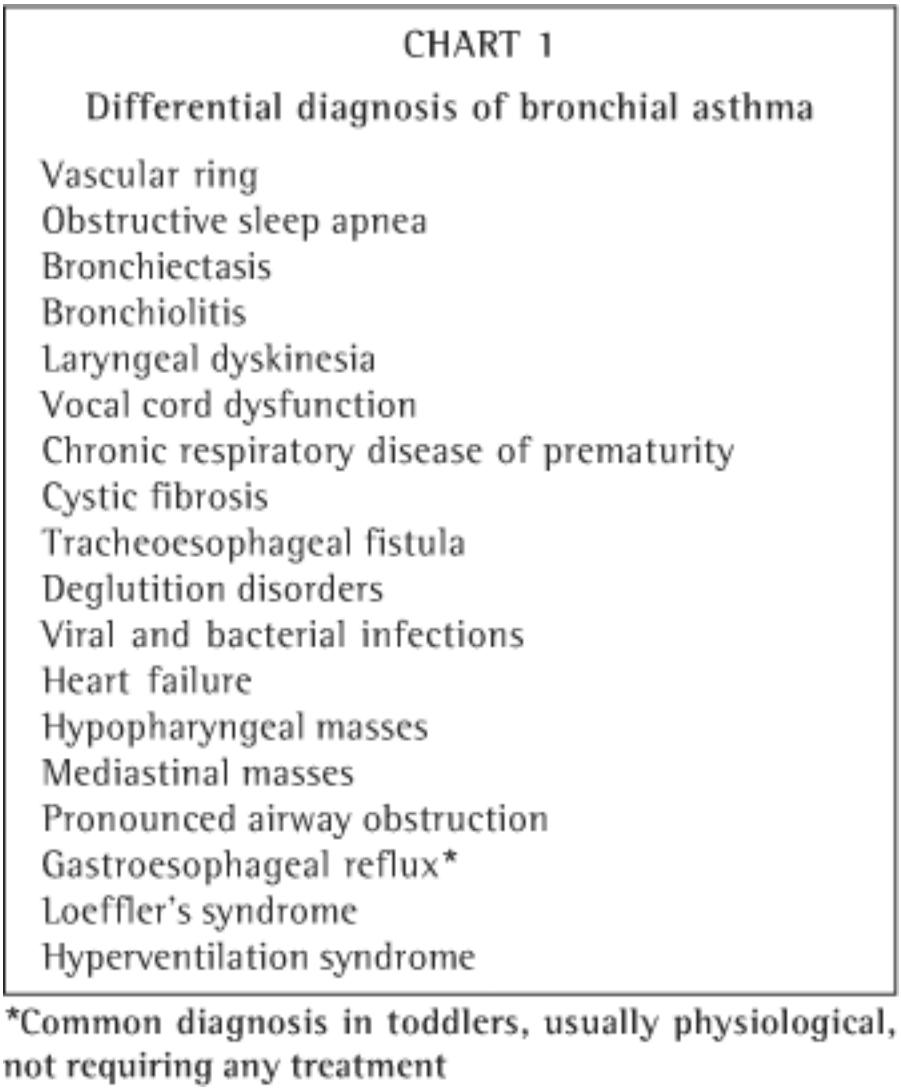


CHART 1

Differential diagnosis of bronchial asthma

Vascular ring
Obstructive sleep apnea
Bronchiectasis
Bronchiolitis
Laryngeal dyskinesia
Vocal cord dysfunction
Chronic respiratory disease of prematurity
Cystic fibrosis
Tracheoesophageal fistula
Deglutition disorders
Viral and bacterial infections
Heart failure
Hypopharyngeal masses
Mediastinal masses
Pronounced airway obstruction
Gastroesophageal reflux*
Loeffler's syndrome
Hyperventilation syndrome

*Common diagnosis in toddlers, usually physiological, not requiring any treatment

Figure 10:-Differential diagnosis of asthma

Sometimes there is diurnal variation in symptoms (worse in late night or early morning); sleep is always disturbed by cough and wheeze. The common co-morbidities related to asthma are rhinitis, sinusitis, rhino sinusitis, gastroesophageal reflux disease (GERD), sleep apnoea, psychiatric diseases

and cardiac diseases. It is found that more than 60% of asthmatics also have allergic rhinitis and at least 10% have chronic sinusitis [12].

ACUPUNCTURE

Acupuncture is considered a part of the much larger system of healing called Traditional Chinese Medicine (TCM) [13]. TCM is one of the very ancient and oldest healing systems until currently utilized by a significant proportion of Chinese and world populations. In this medical paradigm, in addition to this oldest healing acupuncture therapy, other therapeutic options include Qi Gong (energy therapy), herbal therapy, exercise such as Tai Chi, and massage (Tuina), meridian massage, diet, and several other forms. TCM focuses only on promoting "inner balance" or homeostasis of the each individual within the larger internal external environment. Any disturbance from such balance is seen as "ill." One of the main key concepts in TCM is "Qi," a vital energy that circulates all throughout the body in every 14 channels called meridians. When the flow of Qi is disturbed, pain or diseases occurs. Needling at specific acupuncture points along the particular meridian "opens up the channel" and promotes the positive healthy flow of Qi and due to that, health is restored to normalcy[13-14].

Acupuncture is described as a means of letting out of excess qi or blood by making pricks in the skin on the body along certain pathways, called "jingluo" Meridians [15]. A review of the literature of many authors about acupuncture therapy for asthma reveals that the methods adopted by modern

acupuncturists are relatively simple and straightforward. For asthma subjects, it is based on needling the areas of the chest and back that are over the lungs, especially the upper part of the lungs with few adjunctive points elsewhere. Even though a large number of acupuncture points on front and back of ribcage are traditionally indicated for relieving asthmatic breathing, and few are often mentioned in acupuncture formulas recommended textbooks as well as used in clinical trials.

BACKSHU POINTS

In classical acupuncture, acupuncture points in the paraspinal musculature along the urinary Bladder channel are used to stimulate internal organs. These points are so-called Backshu points or Transporting points. Many of these insertion points, considered on millennia of clinical observations, are said to be functionally accurate. Traditional view is that asthma can be caused in relation to discrepancies of the functions of the lung, stomach, and kidney, and largest number of acupoints alleviate dyspnoea are on three meridians: the lung meridian; the half part of stomach meridian traverses the chest; and the half part of the kidney meridian traverses the chest. The bladder meridian is used to treat all organs, and specifically to treat the organs in the area it traverses via the backshu points, there are many bladder points on the upper back used for treating asthma. Urinary bladder points are used for treating asthma, because this is due to blockage in flow of qi or energy in the back (sometimes which is

reflected in the posture) which strongly affects the severity of asthmatic breathing.

The Back-shu are the points on the back where qi of the respective zangfu organs is infused. They are located on each side of the vertebral column, in close proximity to the spinal ganglia and their respective zangfu organs, hence the name Back-shu points. Each of the zangfu organs has a Back-shu point, as does the Sanjiao, a total of twelve.

In the application of the Back-shu and Front-mu points, importance of Yang and Yin characteristics are seen. Front-mu points are located on the ventral Yin aspect of the body while the Back-shu points on the dorsal Yang aspect. The qi or energy of the Back-shu and Front-mu points communicates directly with their related zangfu organs. Clearly, the Back-shu and Front-mu points constitute an important group of specific points. A feature in the distribution of these points is that the level of the Front-mu points on the abdomen corresponds to that of the Back-shu points on the back, both Front-mu and Back-shu points being located at almost the same level as their respectively related zangfu organs. As well as being the points at which the qi of the respective zangfu organs is infused, they are also the places where the pathogenic factors can lodge, causing diseases of either the zangfu organs or of the body surface. In the light of the above, it can be seen that the Front-mu and Back-shu points are of great significance in the physiology, pathology, diagnosis and treatment of diseases.

The Back-shu points are acupuncture points that are located on the first line of the Urinary Bladder Meridian of Foot-Taiyang on the back, 1.5 cun lateral to the Du Meridian which runs in the middle of the spine. These are the points through which the qi of the Du Meridian communicates with the qi of the urinary bladder meridian and then unites into the specific internal organs. Points on the first and second lines of the Urinary Bladder Meridian of Foot-Taiyang have similar indications to those points of the Du Meridian and Huatuo Jiaji points located at the same level. This demonstrates a close relationship between the Back-shu points and the spinal ganglia.

Regarding location, the greater an internal organ is, the higher the corresponding Back-shu point be; and vice versa. That is the lung is the most superior organ among the zangfu, hence its related point, Feishu (U.B. 13), is the highest among the Back-shu points. The urinary bladder is the most inferior organ, its related point Pangguangshu (U.B.28) is also the lowest among the Back-shu points. Front-mu and Back-shu points are not points from their corresponding meridians. Their influence is due to their close proximity to their corresponding internal organs, rather than their location on specific meridians. Back-shu points are important in the treatment of the diseases of the internal organs, because of their clinical significance in diagnosing of zangfu disorders. When zangfu organs malfunctions, positive reactions like sensitivity or tenderness can located on corresponding Back-shu points. Palpation of the sensitive points used to diagnosis disease.

Stimulating techniques like acupuncture, moxibustion and massage can be applied on these points to relieve or cure from disorders of their corresponding organs. For instance, injection of streptomycin in a small dosage at Feishu (U.B.13) or Zhongfu (Lu.l), the Back-shu and Front-mu points of the lung, may help patients suffering from active tuberculosis to build up resistance against the diseases. Puncturing Dachangshu (U.B.25) and Tianshu (St.25), the Back-shu and Front-mu points of the large intestine, may help alleviate acute bacillary dysentery, when repeated treatments given results in a negative stool culture.

Disorders of both Yin and yang meridians and five zang organs can be located at the Back-shu points on the Yang aspect of the body, and disorders of Yang meridians and six fu organs are located at the Front-mu points on the Yin aspect of the body. When Yang is diseased, Yin is also diseased, and vice versa. So Back-shu points are prescribed for disorders of the zang organs, while the Front-mu points are often prescribed for disorders of the fu organs in the clinic.

Application of Back-shu and Front-mu points known as "expelling Yin disorders from Yang meridians, and expelling Yang disorders from Yin meridian. So pressure given on this backshu points can give drastic results in allieviating the asthma along with other complimentary therapies like acupuncture.

LITERATURE REVIEW

Acupuncture as a therapeutic intervention is widely practiced worldwide and in the United States. While there have been many studies regarding its potential uses, many of the studies provide equivocal results because of their design, sample size, and other factors. This issue is complicated by inherent difficulties in the use of appropriate controls, such as placebos and sham acupuncture groups. Promising results have emerged, showing efficacy of acupuncture in many studies like adult postoperative care and chemotherapy nausea and vomiting and in postoperative dental pain. There are other conditions like addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, carpal tunnel syndrome, and asthma, where acupuncture used as adjunct treatment or acceptable alternative or a comprehensive management program. In future further research is likely to uncover additional areas where acupuncture interventions will be useful [17].

Acupuncture is one of the most popular of the alternative therapies. Attractions of acupuncture stem from its long standing use in Chinese medicine and avoiding the side-effects of conventional treatments for asthma such as corticosteroids and also β_2-agonist sympathomimetic [18]. The results of this study corresponds to a largest possible increase in FEV_1 of ~1.7, which may suggest that acupuncture for asthma has little effect on the objective outcomes.

However small effect have been observed for experimentally-induced bronchoconstriction. The differences in aetiology may have given this result effect. Subjective outcomes as quality of life in general, breathlessness and anxiety affected not reliably be assessed and needs to be tested in the future [19].

According to Mitchell et al and Christenson et al Several randomised clinical trials have reported a benefit from acupuncture in the treatment of asthma [20-21], but generally results often appear contradictory, suggesting both beneficial and detrimental effects [22-25]. The efficacy of acupuncture in asthma patients has not been yet proven beyond reasonable doubt [26], due to differences in trial design and mode of treatment and due to small size of the trials. In the insertion of a needle it prevents the use of blindness for removing the placebo effect, so needles are sometimes inserted in "placebo points" [27].

The wide range of outcomes measured using objective tests (peak flow rates) to perceive breathlessness or anxiety introduces alternative source of variation. Differences in the way of treatment includes multiple range of acupuncture points, duration of stimulation and methods of inserting needle [28]. The size of all the individual studies was only a small fraction of the sample size given by a conventional power requirement. To circumvent the problem of this small sample size, the current authors aimed to systematically review and combined the results from all relevant randomised clinical trials

those who have compared acupuncture at real and placebo points in asthma patients [29].

Studies on the prevalence of asthma lack consistency, possibly because of lack of undefined diagnostic criteria, different methodologies, non-standardized study protocols, environmental exposures and basic health care infrastructure. A positive link was seen between asthma and the increasing of age in rural and urban areas. The many studies shows increased number of people within the age group 31-50 in the rural and urban areas. This finding was similar to the result found by Kaur et al and Rao et al [30-31].

A gender difference was noticed in study, males being affected than the females. The male predominance was related to an increased degree of bronchial liability in males. According to Kaur et al and Mansi et al, female predominance was due to the use of cow-dung cakes as fuel for cooking caused airway inflammation and asthma in 3/4th of the total subjects in the study resided in urban and urban subjects were mostly exposed to various environmental allergens and pollutants, hence result is similar to the study of Kaur et al. A close link was seen between Asthma and low socio-economic status subjects (low income, illiterates and labour) distinctly not like the studies of Jain et al and Prasad et al [32-33], close association with the studies of Rao et al and Kaur et al. The results of study documented was a strong association of family history with the prevalence of asthma as noted in the studies of Prasad et al, Kaur et al, Jain et al. According to jain et al a strong association was seen

between family history of atopic disorder and prevalence of asthma whereas the few studies shows only 20% of atopic disorder in Asthmatics. This was due to the geographical variation or small sample size taken. Smoking was as a significant risk factor for asthma. Most of the studies show correlation with this factor. Some study shows only 25% of Asthmatic people were smokers. According to Jindal and Gupta, smoking may be a risk factor of asthma has remained debatable [34].

In few other study 44.16% of asthmatics had diabetes which does not show any correlation with other studies. According to Dhar et al, Van ufford and Abrahamson EH, attacks of asthma may be prevented by intake of glucose [35-37].According to few studies data indicates that urban people, labour, illiterates, low income and low socioeconomic people are more affected due to their financial status. The increased number of asthma is due to the environmental pollution and includes the factors like establishment of more industries, construction of apartments without plantations. This study shows that it is essential to expand health care services and screening programmes for the diagnosis and treatment of asthma [36].

Systematic reviews of acupuncture for asthma concludes that there is little evidence to base clinical conclusions [38-39]. A number of the included RCTs have examined acupuncture for asthma and chronic obstructive pulmonary disease. The RCTs were different with respect to patients, acupuncture techniques, outcome measures, and controls, and have also been small with a

median sample size of 25; and the largest RCT with only 39 patients. Some of the RCTs have used of induced asthma to allow good experimental control[40-41].

To show increased physiological value of acupuncture on lung function, studies have not been replicated and they provided limited insight about the clinical benefits of acupuncture for asthma. Two small RCTs have recently been published which also provide limited insight into the clinical effectiveness of acupuncture for asthma [42-43].

For thousands, of years Asian communities used acupuncture to treat lung problems for hundreds. Modern case reports and case series was seen reporting on acupuncture to treat chronic asthma have also been enthusiastic .According to zang et al in a series of 192 cases of bronchial asthma treated by acupuncture, report was “immediate total effect rate” of 98.9% [44].

According to Biernacki et al acupuncture for stable asthma reduced the need for bronchodilators[45]. In another study by joos et al, patients with allergic asthma showed improvement after acupuncture treatment as an adjunct to conventional care [46]. Many recent clinical research trials on acupuncture for asthma had negative results [47-48]. A systematic review of the controlled clinical trials in asthma concluded that the use of acupuncture to treat asthma is not supported by the evidence from the reviewed trials [49].

More recently, a Cochrane review of 15 trials involving 307 patients reached the same conclusion. Many Studies differed in the theoretical models, as well as treatment and controls, possible methodological quality, and therapeutic dosage of acupuncture. Results were highly contradictory; the authors concluded that still insufficient data to draw a conclusion regarding acupuncture's effectiveness for asthma [50]. Similarly, a 2002 meta-analysis conducted by martin et al concluded that of the 11 trials reviewed, methodological shortcomings in sample size, missing information, adjustment of baseline characteristics, and possible bias against acupuncture by the use of placebo points which may not be inactive make it clear that to accurately assess acupuncture's use in the treatment of asthma, full-scale well designed trials are needed [51].

The challenges of setting up acupuncture research protocols that have good scientific methodology are respectful. And cognizant of traditional Chinese medicine (TCM) theory have proved daunting. As in clinical surgical research, it is impossible to blind the practitioner as to whether or not they are providing an active treatment. The use of sham needles which are designed to keep the subjects blinded remains under investigation [52].

Discussion within the profession about correct therapeutic dosage of acupuncture [53] sham controls,[54] and correct Acupuncture points to use adds confusion in assessing quality of the research,[55] particularly for physicians unfamiliar with the difficulty in the differing schools of thought in

different acupuncture traditions. Many trials administer a single dose of acupuncture against a sham and a control, the results for most of these studies fail to show any statistical difference. A lack of agreement between TCM diagnoses and Western diagnoses, which complicates definitions of inclusion and exclusion criteria, standardized interventions, and consistent and meaningful outcome measures. Diagnosis of allergic asthma may be interpreted according to TCM as deficient kidney yang, lung Qi deficient, invasion of pathogenic factors, or spleen unable to transform mucous, each Need its own particular point prescription and makes a standard treatment protocol difficult. In Asian countries, acupuncture treatment is frequently combined with herbs and medications, which is not necessarily accurately reflected in research looking at the effects of a single intervention in isolation. Still, physicians frequently hear stories of acupuncture's successful use in controlling symptoms of asthma. In one case series, acupuncture was effective in aborting an acute asthmatic attacks if the needle sensation was felt strongly and needles were left in place with frequent stimulation for 15 to 60 minutes [56].

Another study found no benefits from 1 treatment of laser acupuncture in preventing exercise-induced bronchospasm [57] Additional studies are needed to determine the cost-effectiveness of acupuncture and optimal treatment regimens for asthmatic children. Considering the controversy, one can assess whether or not to endorse acupuncture to treat asthma, Clinically, the landmarks of therapeutic efficacy are safety, amelioration of symptoms, quality of life [58] ability to maintain or regain normal activities, possible reduction in medication

use,[59] subjective and objective changes such as reduced anxiety or improved sense of wellbeing[60].

Until more definitive large-scale trials can be done, it seems clear that acupuncture should not be used as the only treatment of asthma, but it may be helpful for some people in promoting well-being, reducing anxiety, and enhancing relaxation. If patients are interested in trying acupuncture, they can be assured that it is safe, has not been shown to exacerbate or worsen asthma, and is not contraindicated as an adjunctive therapy to conventional medical regimens for acute or chronic asthma [61-62].

Patients suffering from chronic pulmonary conditions often have complex constellations of symptoms. Massage and acupuncture helps with subjective dyspnoea, and regular massage to enhance objective pulmonary function. Both acupuncture and massage enhance patients' overall sense of well-being and reduce pain and anxiety. Both therapies are safe when used with precautions. Additional research needed to assess the optimal, most cost-effective role in the treatment of patients with chronic pulmonary conditions [63].

One of the inconclusive evidence to indicate that short term (1-12 weeks) acupuncture treatment has a significant effect on the course of asthma. Some studies report significant positive changes in subjective parameters, and medication use, suggesting that patients with asthma benefit from acupuncture. Due to basic differences between trials and inadequate data presentation none of the data collected were suitable for meta-analysis, so it is impossible to make

any objective comparison on the basis of the currently available data. According to some studies no recommendations can be made one way or the other to either patients, physicians or acupuncturists, on the basis of the available data. There is an urgent need for information on the different ways in which acupuncture is practiced and might be evaluated in order that appropriate trials can be designed.

The methodological inconsistencies and problems encountered in all the trials reported to date indicate that more pilot data should be acquired before proceeding to any large scale randomized trials. In particular, researchers should pay attention to the nature of sham/control points selected since in a number of the studies the control points selected used for the treatment of asthma according to Traditional Chinese Acupuncture practice. Future trials should therefore include a no-treatment control group. Particular care should be taken in selecting patients so that they may be matched for parameters such as age, duration of asthma and severity of lung function abnormalities.

Attention needs to be paid to the nature or style of acupuncture used according to Stux 1997 or Helms 1998). Already available evidence does not allow objective comparison between different acupuncture types. Therefore, it is not possible to comment on claims by proponents of any technique or style that any one is better than any other. A major issue complicating the evaluation and integration of acupuncture in the western world is the model of treatment. If applied according to the principles of TCM, acupuncture often comes as part of a package of care that includes diet and herbal medicines. The acupuncturist may

modify the sites in different patients with asthma, as according to the TCM these patients may have different disorders.

From a western perspective this treatment seems to be “individualized”. Outside China, “standardized” treatment strategies are frequently used. These strategies are more compatible with western practice. However, as a growing number of western acupuncturists also apply traditional Chinese strategies, a deliberate restriction to evaluating only the “standardized” model might not be adequate. Few trials specifically evaluated the side-effect and morbidity profile of acupuncture treatments.

This review highlights the any trial or investigation of acupuncture is a complex challenge and many different parameters need to be controlled for and investigations like, needle depth, type of needle manipulation like manual, electrical stimulation, moxibustion , siting of needles, induction of deqi which is an irradiating sensation after needling to indicates effective needling, duration of insertion, duration of stimulation, use of standardised formulae versus individualised prescribing all are considered. Researchers are advised to consult widely and in particular to take advice from those who have knowledge of the different styles of acupuncture practice and of trial design and methodology [64-65].

Although there are many allopathic treatments including bronchodilators and corticosteroids, which either focuses on long-term control or immediate relief, there is no single medication that is effective against both

the inflammatory and Broncho constrictive components of asthma. So many sufferers turn to alternative or complementary therapies, typically in conjunction with their regular allopathic or other traditional medications. The current short communication briefly reviews the disease and investigates the types of alternative and complementary treatments available to asthma sufferers. It is concluded that therapies like acupuncture, yoga, Tai Chi Chuan and hypnosis are used by many asthma patients but it seems as if many patients do not communicate the use of such therapies to their medical practitioners.

Results from documented research, show alternative therapies for the treatment of asthma role play and are effective to alleviate the symptoms. However, well-organized clinical trials are needed to document efficacy and delineate the specific types of interventions most appropriate for particular asthmatic populations [66].

The literature is ambivalent with the respect to the effectiveness of acupuncture in the treatment of asthma. In 1979, the World Health Organization (WHO) listed 40 diseases for which acupuncture was considered to be beneficial. Diseases of the respiratory tract including asthma and bronchitis were included in that list [67]. Yu and Lee [68] had reported that acupuncture was useful in alleviating the symptoms of asthma although there was no control group in their study. Fung et al [69] investigated the efficacy of acupuncture in the treatment of asthma and concluded that acupuncture provided better

protection against exercise-induced asthma than did (placebo) sham acupuncture ($p < 0.05$).

In a study conducted at the Department of Anaesthesia and Intensive Care in the University Hospital of Vienna, the study findings revealed that over 70% of patients with long-standing asthma had reported a significant improvement of their ailments after ten weeks of acupuncture treatment (Zwölfer et al., [70].

On the other hand, Kleijnen et al. [71], who had earlier reviewed studies on the basis of 18 pre-defined methodological criteria reported that acupuncture is effective in the treatment of asthma are not based on the results of well-performed clinical trials. This is supported by the findings of the members of the Cochrane Airways Group who reviewed all clinical trials that investigated the role of acupuncture (with treatment duration ranging from 1 to 12 weeks) to control or alleviate the symptoms of asthma.

In total, seven trials involving 174 patients were reviewed. All patients continued taking their prescribed asthma medication in conjunction with the acupuncture treatments. The trials reviewed had variable quality and inconsistent results. No significant or clinically relevant effects were found for those patients who received acupuncture treatments [72]. Later, McCarney et al. [73] also concluded that there was insufficient evidence for the use of acupuncture in the treatment of asthma.

Forced expiratory volume in one second (FEV1) is the volume of air forcefully expired during the first second after a full breath [74] and normally accounts for greater than 75% of the FVC [75]. This value is recorded both as an absolute value and as a percentage of the FVC (FEV1/FVC %) [74-75]; and is regarded as "the most reproducible value derived from spirometry" [76]. The FEV1 is reduced in obstructive lung disease because of increased airway resistance [75] while in restrictive lung disease it is because of the low vital capacity (VC).

The hallmark of airway obstruction is a reduction in FEV1 [76] and the ratio of FEV1 to the FVC [77]. A reduced ratio of FEV1 to FVC, when compared with predicted values, demonstrates the presence of airway obstruction (Gina Report, 2007). In asthma the FEV1 is usually decreased, the FVC is usually normal and the ratio FEV1/FVC % is decreased [78-79]. The prolongation of expiratory flow rates is increased by bronchospasm (in asthma). [80-82] all state that spirometer measurements should be performed before and after inhalation of a short-acting bronchodilator in all patients in whom the diagnosis of asthma is considered. FEV1 as a measure of asthma severity has advantages compared to peak expiratory flow (PEF). These include greater accuracy, less effort dependence, better reproducibility, and for some spirometers the availability of real-time graphics and quality assurance checks to confirm reliability of the results [83-84].

According to some studies the diagnosis of asthma, however, cannot be based on spirometry findings alone because many other diseases are associated

with obstructive spirometry indices [78, 82]. PEF monitoring is designed for ongoing monitoring of asthmatic patients. Peak flow meters are relatively inexpensive, portable and ideal for patients to use in a home setting [78]. The test is simple to perform and the results are a quantitative and reproducible measure of airflow obstruction (80, 82, and 78]. It can be used for short term monitoring, exacerbation management and daily long-term monitoring [82, 78] A 60 L.min-1 (or 20% or more of pre-bronchodilator PEF) improvement after inhalation of a bronchodilator [85] or diurnal variation in PEF of more than 20% ,With twice daily readings, more than 10% [86] suggests a diagnosis of asthma. A PEF less than 50% of predicted represents severe obstruction.

Several alternate or complementary treatments may be utilised in the management of asthma. These include hypnosis, herbal remedies, homeopathy, massage therapy, yoga, reflexology, dietary intervention, acupuncture and chiropractic. Although Lehrer et al [87] states that there is a lack of evidence for the effectiveness of many of these therapies, he is of the opinion that an effective non-pharmacologic alternative or adjunctive treatment of asthma could provide a potentially useful contribution to asthma care.

In the study of Nielsen et al [88], the mean baseline FEV1 was increased slightly during the active SMT phase and dropped slightly during the placebo manipulation phase. Statistically significant difference in results between the SMT and the sham manipulation could be due to the technique of the sham intervention itself. The technique involved a patient lying prone on table with a drop-piece for the thoracic and lumbar “manipulations” and lateral

recumbent for the cervical “manipulations”. One hand of the practitioner applied gentle pressure over the spinal contact while the other hand thrusted on the drop-piece simultaneously releasing it.

Despite the authors reported that this method has been shown to be acceptable placebo intervention [89-90], it is still possible that the gentle pressure applied over the vertebrae and drop itself could influence the vertebral joint dysfunctions or inaudible cavitations could have also occurred. The motion palpation of the spine prior to the sham manipulation could also have had a therapeutic benefit. The inclusion of patients with long-standing moderate asthma who were dependant on inhaled steroid therapy could have also contributed to the lack of statistical significant findings as it is possible that such patients were unlikely to respond to spinal manipulation therapy (SMT).

These results do not support the hypothesis that bi-weekly acupuncture, when it is administered over a several-week period, is beneficial in relieving symptoms, reducing the need for medication, or improving lung function (either acutely or chronically) in patients with chronic, moderate to severe asthma. Several factors could account for these negative results.

First the real acupuncture administered to our subjects may have been incorrectly applied. However the practitioner who performed the acupuncture for this study was well trained and clinically experienced and used standardized acupuncture formulae conventionally used for asthma therapy. Moreover, the same acupuncturist with the use of the same acupunctural techniques participated in a previous study in which real acupuncture did have a significant

acute beneficial effect in experimentally induced asthma when real acupuncture was compared to placebo acupuncture.' Second, since most of our subjects had long-standing moderate to severe asthma with steroid dependence, they may have been less responsive to any form of therapy than subjects with milder asthma in whom we previously demonstrated a significant acute dilator response to acupuncture treatment [91].

However, most of the subjects in the present study did exhibit a significant bronchodilator response to an aerosolized Pasonist. Moreover, when analysis was restricted to those subjects with asthma who demonstrated an acute improvement in FEV, after isoproterenol of: i30% during the baseline evaluation for this study, similarly negative results were found. Third dynamic airway compression caused by the forced exhalation maneuver of spirometry or a bronchoconstrictor effect of the preceding deep inspiration might have masked a favorable effect of acupuncture on bronchomotor tone [92].

Although acupuncture therapy has previously been demonstrated to produce acute improvement in symptoms and/or pulmonary functions [92-95] during acute attacks of asthma, either spontaneous or experimentally induced, the findings of the present study failed to demonstrate a beneficial short-term effect of acupuncture therapy in chronic asthma.

To our knowledge, there are no published articles of previous clinical trials of repeated sessions of acupuncture for treatment of chronic asthma that have used an adequate experimental design to control for biases or a possible placebo effect. A previous article from West Germany'" indicated that of 216

patients with chronic asthma resistant to conventional therapy with bronchodilators, mucolytic, and corticosteroids, 25% to 58% demonstrated an "excellent" response to acupuncture applied according to classical Chinese doctrine based on pulse-diagnostic techniques. This favourable response consisted of long symptom-free intervals, no requirement for corticosteroids, less than three asthmatic attacks per year, and >30% improvement in spirometric flow rates. In the same article, '3 of 28 patients who were not treated with acupuncture (control group) only 7% demonstrated good results, and the remainder demonstrated little improvement during a follow-up period of 2 to 3 years.

Immunocytochemical staining of bronchial biopsy sections has confirmed that IL-5 mRNA transcripts are translated into protein in asthmatic subjects. Furthermore, the number of activated CD4 + T cells and IL-5 mRNA positive cells are increased in asthmatic airways following antigen challenge and studies that have examined IL-5 expression in asthmatic subjects before and after steroids have shown significantly decreased expression following oral corticosteroid treatment in steroid-sensitive asthma but not in steroid resistant and chronic severe steroid dependent asthma. The link between T cell derived IL-5 and eosinophil activation in asthmatic airways is further strengthened by the demonstration that there is an increased number of alpha IL-5R mRNA positive cells in the bronchial biopsies of atopic and non-atopic asthmatic subjects and that the eosinophil is the predominant site of this increased alpha IL-5R mRNA expression. We have also shown that the subset of activated

eosinophils that expressed mRNA for membrane bound alpha IL-5r inversely correlated with FEV1, whereas the subset of activated eosinophils that expressed mRNA for soluble alpha IL-5r directly correlated with FEV1. Hence, not only does this data suggest that the presence of eosinophils expressing alpha IL-5R mRNA contribute towards the pathogenesis of bronchial asthma, but also that the eosinophil phenotype with respect to alpha IL-5R isoform expression is of central importance. Finally, there are several animal, and more recently in vitro lung explant, models of allergen induced eosinophilia, late airway responses (LARS), and bronchial hyperresponsiveness (BHR)--all of which support a link between IL-5 and airway eosinophilia and bronchitis.[96].

It belongs to the category of "Asthma Syndrome" in traditional Chinese medicine. Xiao Bing of Zheng Zhi Hui Bu says: Asthma is a long-time and recurrent phlegm-wheezing disease. Combination of obstruction qi in the body, abnormal infection outside and thick phlegm on the diaphragm obstruct the respiratory tract and then asthma occurs. Traditional Chinese medicine holds that the reasons of asthma are long-time phlegm staying in the lung, exogenous infection, diet, mood and tire. They cause phlegm obstructing the respiratory tract and adverse lung qi. In Morocco, agriculture and stockbreeding are well developed; there are a lot of allergen such as dust and pollen. Due to traditional habit, local people don't like to wear stocks. Some people still walk on the cement with naked feet in winter. Moroccan likes to eat sweet food and get a fat figure. Fat people have phlegm in the body. The gap between the rich and the poor is obvious. There are a lot of poor people. They often postpone seeking

medical advice after they are ill. They also often make bold to reduce or stop taking medicament. These are the possible reasons of inducing the high incidence rate of asthma. The point selection in this therapy combined Backshu-Shu acupoint with clinical commonly used points. Because most of patients had a long disease course, treating root cause was main. "Spleen is the source of the phlegm, lung is the vessel to restore phlegm", so Pishu (BL 20) is selected to invigorate spleen, tonify qi and eliminate phlegm. It treated the source of phlegm based on the meaning"banking up earth to generate metal". Feishu (BL 13) is selected to regulate the lung function, clear lung and stop asthma. Kidney is the root of qi and congenital base. So Shenshu (BL 23) can consolidate vital base, improve inspiration, tonify yin and produce body fluid. Xinshu (BL 15) and Ganshu (BL 18) can loosen the chest, relieve depression, dredge mood and regulate organ. Tiantu (CV 22), Danzhong (CV 17), Feishu (BL 13), Zusanli (ST 36) and Dazhui (GV 14) are all common points for treating asthma.

The statistics of asthma content in 62 ancient books in Retrieval System of Acupoint‘s Indication in Ancient Acupuncture Book [97] showed that the use frequency of above acupoints were highest. The combined use of the above points can reach the purpose of treating both symptoms and reason. In control group, only commonly used points were selected Moxibustion was added for warming the meridian, dispersing cold, promoting the qi-blood circulation, and enhancing the body immunity to expel evil. The selection of specific acpoints can stop asthma. By inhibiting IgE dependent antigen-antibody reaction, reducing slow blood flow due to local blood vessel dilation, reducing cell

adhesion of inflammatory cell (especially eosinophil cell rolled on the cell wall), and treatment purpose was reached. For the patient in remission stage, they were required to avoid catching a cold, prevent upper respiratory tract infection, avoid contacting allergen such as irritative gas, pollen, paint, fur, dust and avoid eating allergic food such as fish, shrimp, crab and and avoid using allergic drug such as penicillin, aspirin and , to keep good mood and avoid stress. When the body condition was allowed, physical exercise (such as medical gym, breath training and shadowboxing) should be done. It can strengthen the constitution and transfer the notice on the disease and effectively control the asthma relapse. In the treatment, the author also found that for the patient accompanied with allergic rhinitis, early prevention and timely treatment for allergic rhinitis, could not only control the development of allergic rhinitis, but also stop asthma or reduce the attack degree of asthma. From the existent work, there was no significant statistic difference among three groups. But the control and marked effective rate in Back-Shu acupoint group and acupuncture-moxibustion group was significantly higher than that in acupuncture group. It indicated that Back-Shu acupoint could enhance the control and marked effective rate. For the control and marked effective rate between Back-Shu acupoint group and acupuncture-moxibustion group, maybe patient made moxibustion at home and lacked of manipulation accuracy [98].

Recently, high levels of neurotrophic factors have been found in bronchial asthma; these factors include nerve growth factor, brain-derived neurotrophic factor, and leukemia inhibitory factor, among others. Neurotrophic factors are

first synthesized in bronchial epithelial cells, immune cells, and other cells in the airway; they are then taken up by the synapse and are finally transported to dorsal root ganglia (C7-T5). Increased neurotrophic factors in dorsal root ganglia promote the synthesis and release of s ubstance P. As a result, substance P causes a series of reactions such as contraction of airway smooth muscles, secretion of mucous fluids, seepage of capillary vessels, release of mediators of inflammation, and aggravation of airway hyperreactivity. It is interesting to note that the anatomic locations of dorsal root ganglia (C7-T5) are similar to a series of acupuncture points in traditional Chinese medicine. These points are all situated on 2 sides of the midspinal line, and most of them belong to Back-shu acupuncture points. In traditional Chinese medicine, Back-shu points can be used to treat patients with bronchial asthma through acupuncture and moxibustion. Is it a coincidence, or is there a real connection? These points possess similar neurotonia, physical function, and therapeutic effects; the functional area of Back-shu is composed of these points. When these points are pricked with a needle along the lower border of the spinous process, dorsal root ganglia and spinal nerves are stimulated; this can help to regulate the synthesis and release of neurotransmitters. It is hypothesized that dorsal root ganglia may be the targets of acupuncture in the treatment of asthma; in this process, acupuncture has an inhibitory effect on the uptake of neurotrophic factors, or it inhibits the synthesis and release of substance P in dorsal root ganglia. As a result, airway neurogenic inflammation in asthma is relieved.

Researchers find acupuncture effective for relieving allergic asthma. In a randomized controlled trial of 1,445 patients, acupuncture provided lasting relief for six months. Acupuncture was provided for a maximum of 15 treatments over a three month period. Patients receiving acupuncture demonstrated significant relief from allergic asthma at all data points, including the six month post-treatment follow-up data point. Patients receiving acupuncture had marked reductions of allergic asthma during strenuous and moderate exercise, work and social activities, and during sleep. The overall quality of life scores for patients receiving acupuncture were significantly higher than patients in the control group receiving no acupuncture. The researchers note, "Study results reveal that the use of acupuncture as adjunct to the routine care of allergic bronchial asthma was superior to routine care alone in improving both specific symptoms and general quality of life." [100] Secondary outcome measures document that patients were satisfied with acupuncture treatment results.

The researchers note that after the three months of acupuncture treatments, patients had significant improvements in global quality of life scores and individual parameters such as symptoms, activities, emotions, physicality, and mental function. An important finding, the durability of acupuncture was confirmed by a six month follow-up. Despite not having any acupuncture for three months following the completion of the study's treatment regimen, the six month data point measured improvements "comparable to the 3 months' improvements."

The researchers were from Charité – Universitätsmedizin Berlin, Universität Freiburg, and University of Zurich. They provided basic statistics on the prevalence of asthma. Incidence varies between countries, with a range of 4–32%. They add that corticosteroids are standard in usual care. They note that in China, "herbal medicine and acupuncture have traditionally been utilized in the treatment of lung disease, including asthma." In addition, "A reasonable estimate is that about 30% of adults and 60% of children in the U.S. use some form of complementary and integrative medicine (CIM) therapy for their asthma."

Research from Anyang General Hospital confirms the results of the aforementioned European research. [101] Acupuncture was determined safe and effective as an adjunct to usual care for the treatment of asthma. In the two week study, patients receiving only drug therapy were compared with patients receiving treatment with both drug therapy and acupuncture.

METHODOLOGY

METHOD OF STUDY:

Study Design: Randomized control study. The total study duration of each patient is 3 months. Initial screening will be done to involve the patients meeting the requirements of inclusion criteria and selected patients will be allotted for intervention. Patients enrolled at baseline assessment were asked to record asthma diary throughout the study period.

Study design

Type of the design: A randomized control trial

Allocation of patients into study and control groups

Patients were randomly allocated in Group I (Acupuncture group) and Group B (acupuncture cum backshu group) in 1:1 ratio. 60 Subjects were initially screened and assigned to two groups. i.e., Group A (n= 30) and Group B (n= 30). The subjects were not informed of the group they were taken in.

Sampling size:

Sample size: 30: 30

Duration of study: 3 months

Source of Data:The study subject were recruited from the out-patient and in-patient department, of Government Yoga and Naturopathy Medical College, Arumbakkam, Chennai District of Tamilnadu state ,through screening done to

assess inclusion and exclusion criteria age ranging from 30-55years in both the genders.

Ethical considerations

Ethical clearance

Ethical clearance was sought from the Institutional Ethical Committee prior to the start of the study and the approval for the same was granted.

Written Informed consent

Subjects who fulfilled inclusion criteria were informed about the purpose of the study and rights as research subjects. Informed consent form was administered in English. Adequate time was given to each subject to go through the information sheet and their queries were answered. Their right to withdraw from the study and the need for willingness to participate voluntarily in the study was explained. All the subjects expressed their willingness to participate in the study by giving a signed informed consent. (A sample information sheet and consent form is enclosed in Annexure).

Inclusion criteria:

1. Men or women, aged 30-55 years;
2. Patients with asthma history or typical clinical symptoms.
3. Agree all procedures in this trial and signing a written informed consent form
4. Patients who are willing to participate in the study.

Exclusion criteria:

1. Participation in another clinical trial in the previous 1 month;
2. Have received systemic corticosteroids in the previous 2 weeks;
3. With systemic infection, respiratory infection, pulmonary tuberculosis and fungal infection in the previous 1 month;
4. Hospitalization due to acute exacerbation of asthma in the previous 3 months or in the baseline period;
5. Cannot stop using inhaled corticosteroids, theophylline, long-term β_2 agonist, sodium cromoglicate, leukotriene antagonists, anticholinergic drugs or be allergic to albuterol and corticosteroids;
6. Complicated with other severe primary diseases (including hypertension, cancer, hyperthyroidism, bronchiectasis, cardiac insufficiency) and conditions that would prevent participation in the trial or put the participant at risk;
7. Women who are known to be pregnant or breastfeeding;
8. Acupuncture contraindications, such as serious atopic or infectious dermatopathy and Hemorrhagic diseases (including thrombocytopenic purpura and hemophilia), and needlephobia.

Withdrawal Criteria:

- All subjects are free to withdraw from participation in the study at any time, for any reason, specified or unspecified, and without prejudice to further treatment. Subjects who are withdrawn from the study will not be replaced.

Screening Procedures / Visits:

Once the subjects are selected for the study with convenient sampling method will be done, and asthma quality and life questionnaire (AQLQ) & peak flow meter for respiratory function test Predicting PEF AND FEV1 Scores will be extracted from the participants of both the groups.

One group will receive the back-shu point massage for 20 minutes Pe sitting for weekly three days in a week for one month and acupuncture points pre-selected. This will remain the Group 1.UB- 13, LU-5, LU-7, PC-6, K-3 will be given to this group.The other group II will be on acupuncture treatment without any other intervention, their details will be collected through the same AQLQ and peak flow meter. This will remain the Group 2.

INTERVENTION:

Group I (Pre-selected Acupuncture points)

In this group 30 subjects after randomization were treated with acupuncture. Points were preselected .Patients were given AQLQ Questionnaire to fill up.

PEF & FEV1 Readings noted. Acupuncture given .Needle was retained for a period of 20 minutes and thereafter the needles were removed.

General description about points

UB-13:-Fieshu .

Location: On the back, 1.5 cun lateral to the lower border of the spinous process of the 3rd thoracic vertebra.Backshu point of lung

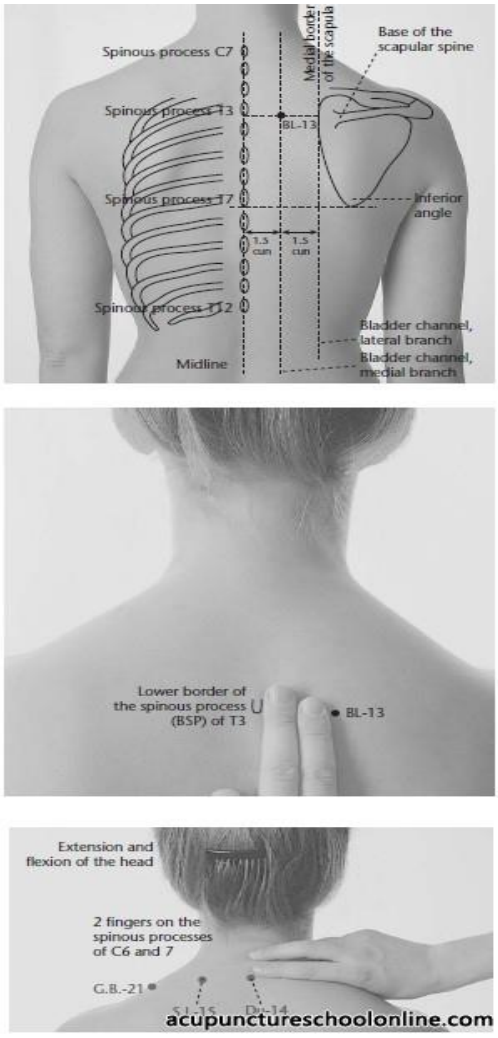


Figure 11:-UB 13 backshu point

LU-5:-Chize.Location:On the cubital crease, on the radial side of the tendon biceps brachii. He-Sea point of the Lung Meridian

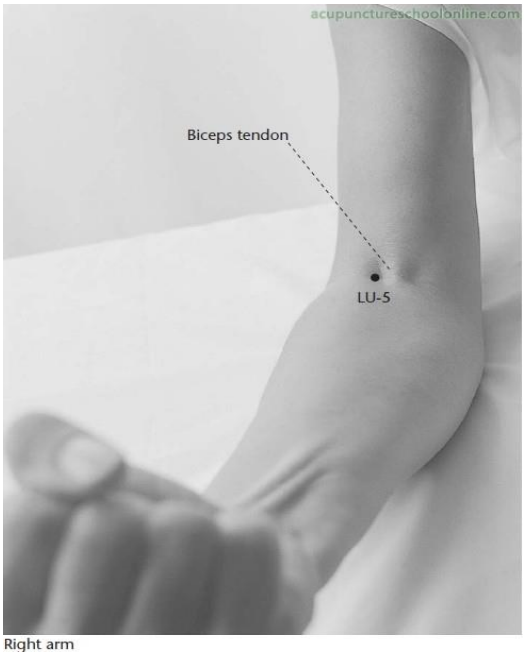


Figure :-12,LU -5 Acupuncture point.

LU-7:- Lieque.Location**:** On the radial margin of the forearm, superior to the styloid process of the radius, 1.5 cun above the transverse crease of the wrist. Luo-Connecting point of the Lung Meridian. Figure :-13.LU 7 Acupuncture point. ffff

Figure:-13,LU 7 Acupuncture point

P6:- Neiguan.Location**:** On the palmar aspect of the forearm, 2 cun above the transverse crease of the wrist, on the line connecting PC 3 and PC 7, between the tendons of palmaris longus and flexor carpi radialis.

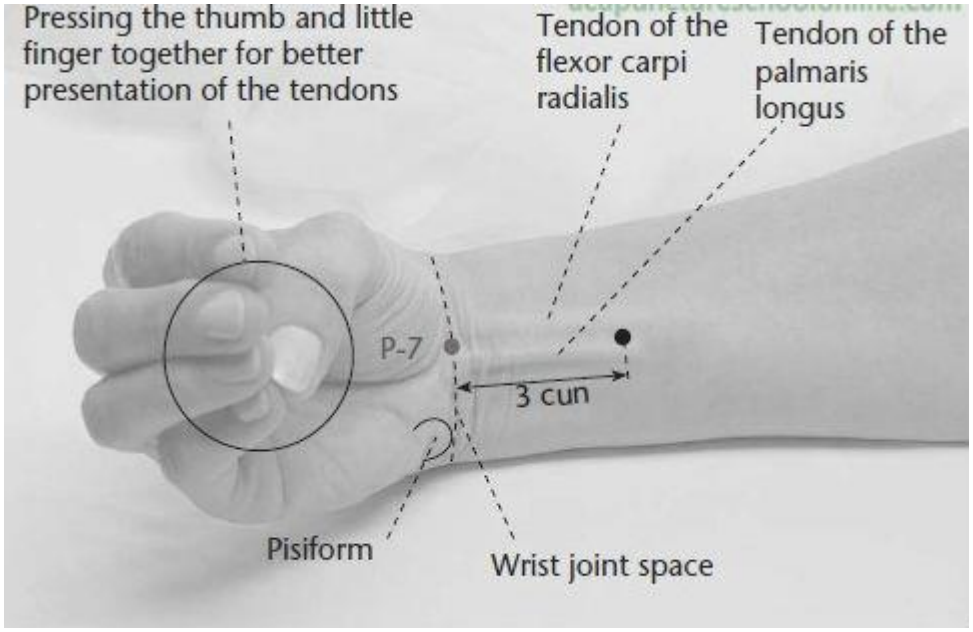
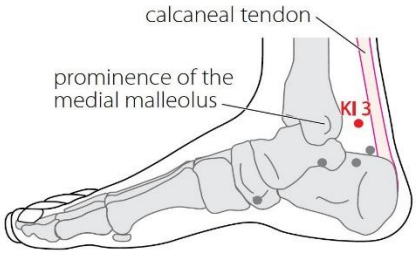


Figure :-14,P6 Acupuncture point.

K-3:- Taixi .Location**:** On the medial aspect of the foot, posterior to the medial malleolus, in the depression between the tip of the medial malleolus and tendocalcaneus. Yuan-Source point of the Kidney Meridian. Shu-Stream point of the Kidney Meridian.



KI3

Figure :-15,K3 ACUPUNCTURE POINT

Group II (Acupuncture cum backshu points pressure)

In this group 30 subjects after randomization Patients were treated with Backshu point pressure and acupuncture . Point's were preselected .Patients were given AQLQ Questionare to fill up. PEF & FEV1 Readings noted. Backshu points pressure was given along the backshu points for a duration of 20 minutes followed by same preselected Acupuncture points been needled.Needle was retained for a period of 20 minutes and thereafter the needles were removed.

TABLE 4: BACKSHU POINTS

Meridian	Shu Point	Location
LU	BL 13	1.5 cun from T3
PC	BL 14	1.5 cun from T4
HT	BL 15	1.5 cun from T5
LV	BL 18	1.5 cun from T9
GB	BL 19	1.5 cun from T10
SP	BL 20	1.5 cun from T11
ST	BL 21	1.5 cun from T12
TE	BL 22	1.5 cun from L1
KI	BL 23	1.5 cun from L2
LI	BL 25	1.5 cun from L4
SI	BL 27	S1 sacral foramen
BL	BL 28	S2 sacral foramen

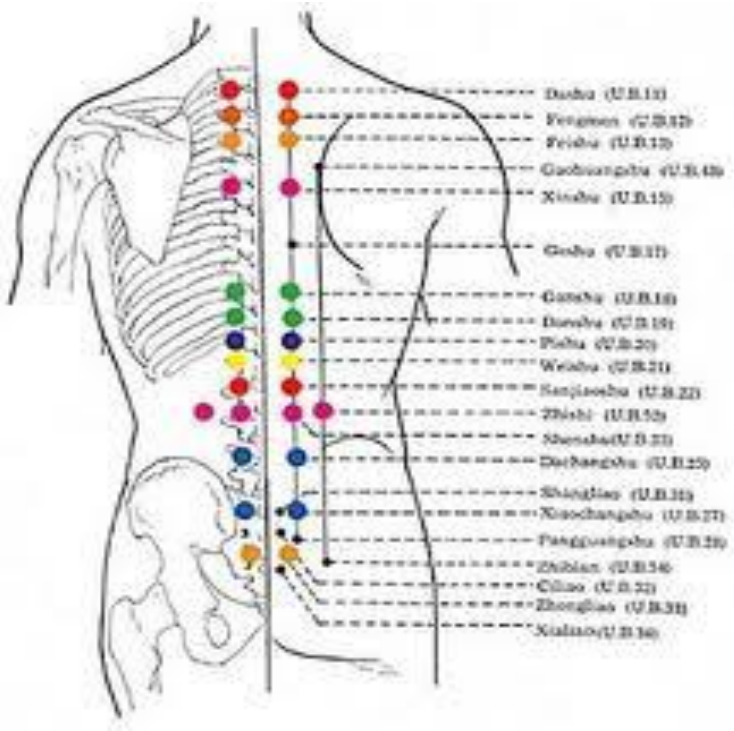


Figure 16:-Backshu points bladder meridian.

Needling

Needling methods for both groups were same.

- Both groups were treated with ‘use and throw’ stainless steel needles.
- Needles with the measurement of 0.25 * 0.25 were used throughout the study.
- Sterile measures were adopted and used needles were carefully disposed.
- Needles were inserted till the level where the sensation of presence of needle was perceived by the subject or at the level where deqi (arrival of qi) is elicited.

Figure :-17,Backshu acupuncture

Method of collection of data:

- During the first visit

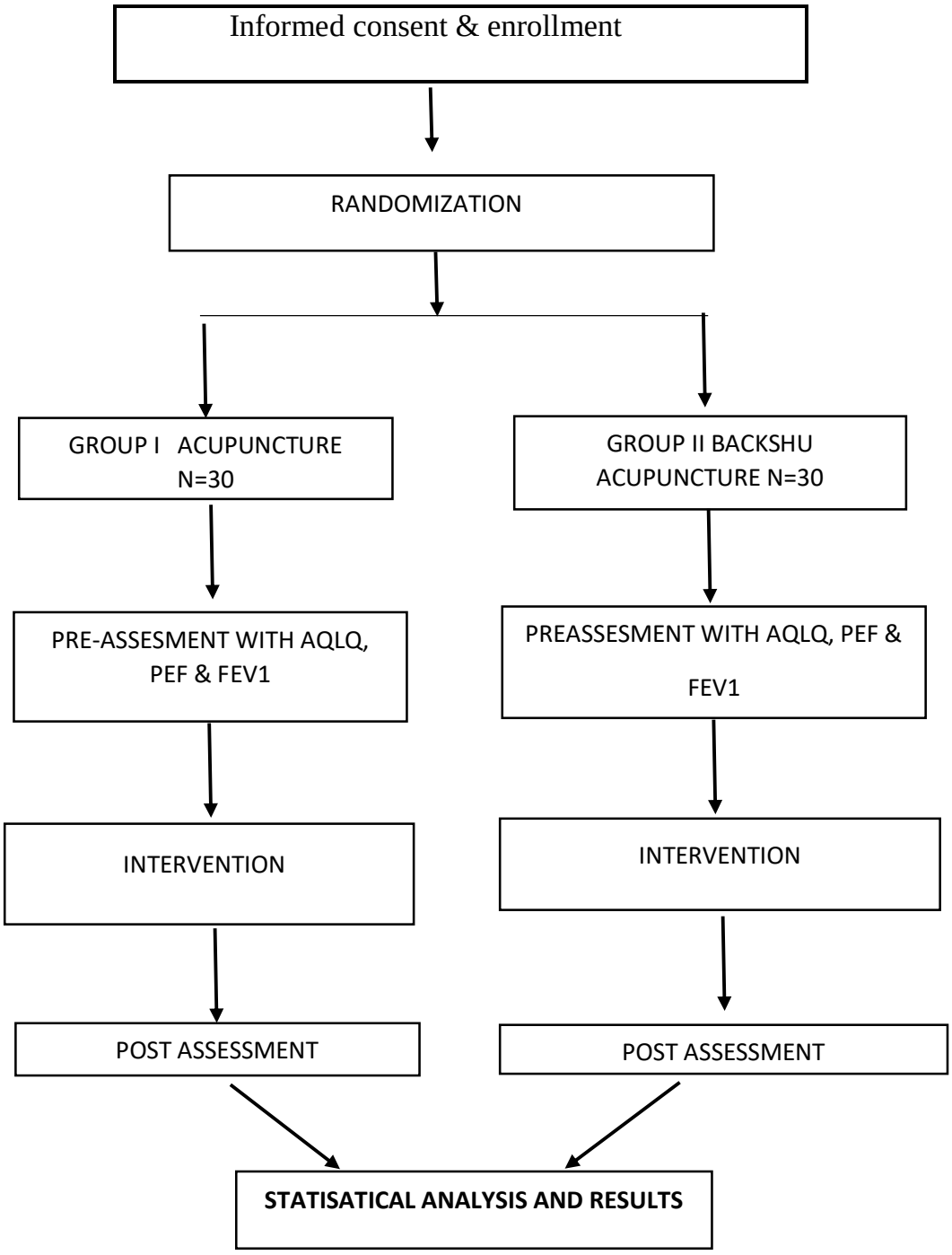
  Patients are given backshu point massage and acupuncture weekly thrice to one group I and other group II only acupuncture treatment.

- After the period of 3 months AQLQ questionnaires and Peak flow meter values PEF AND FEV1 were taken to assess the effectiveness of the interventions.

- Data were organized in Microsoft Excel sheets (version 2010).

STUDY PLAN

Trial Profile



Statistical Analysis:

Data Extraction:

The assessments were done on the first day (baseline data) and end of 90 days (post data). The data was organized in Microsoft Excel Sheets (Version 2010). Data were analysed using IBM SPSS 16.0. The data was checked for normality by Kolmogorov-Smirnov test, Parametric and non-parametric Variables were analysed through Paired Samples' test and Wilcoxon Signed Ranks Test to compare means between the two groups. For all the analysis, we present 95% confidence intervals and considered $p < 0.05$ as significant.

RESULTS

There was evidence of changes in improvement of pulmonary function on comparing between acupuncture group and acupuncture cum backshu group. Within the acupuncture group showed significant change in the quality of life done using Mini AQLQ (0.001) shown in Table 1. Also shows a significant increase in the PEF ($p<0.006$) and FEV1 ($p<0.02$) in acupuncture group. In the acupuncture cum backshu group significant changes are noted in the post study in quality of life ($p<0.001$) and in the PEF ($p<0.001$) and FEV1 ($p<0.004$) values. Duration of conducting the intervention is a key factor in showing positive changes in the results.

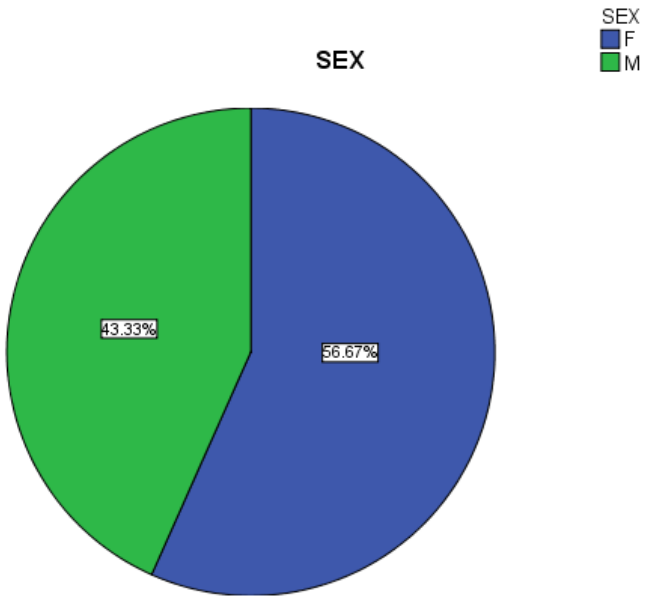


Figure 18: Representation of percentage distribution of gender in acupuncture group

Figure 18 represents the gender distribution in acupuncture group with percentiles of male 43.33% and female 56.67%.

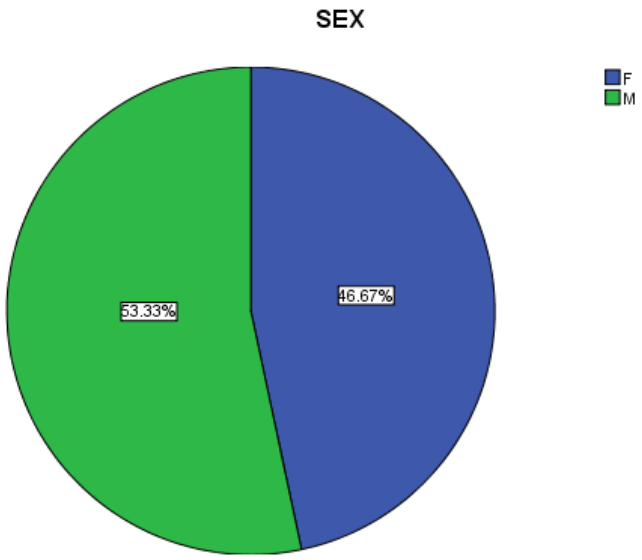


Figure 19: Representation of gender distribution in acupuncture cum backshu group

Figure 19 represents the gender distribution in acupuncture Cum backshu group with percentiles of male 53.33% and female 46.67%.

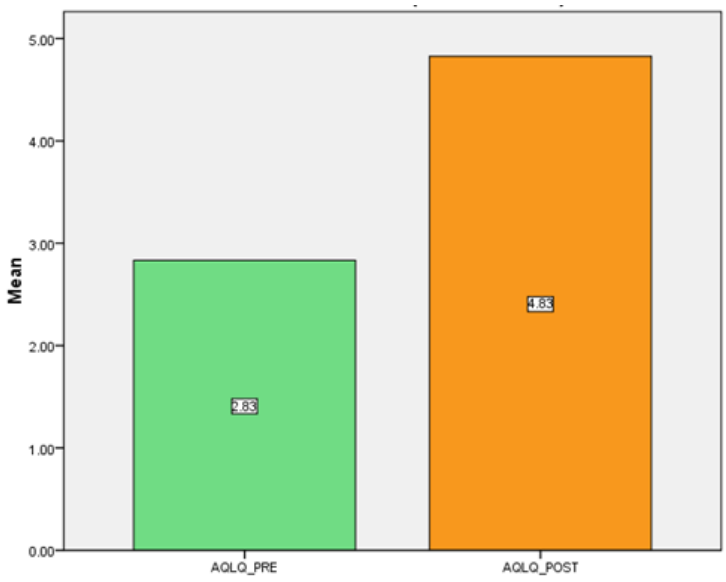


Figure 20: Representation of AQLQ (Mean) within acupuncture cum backshu (ACB) group

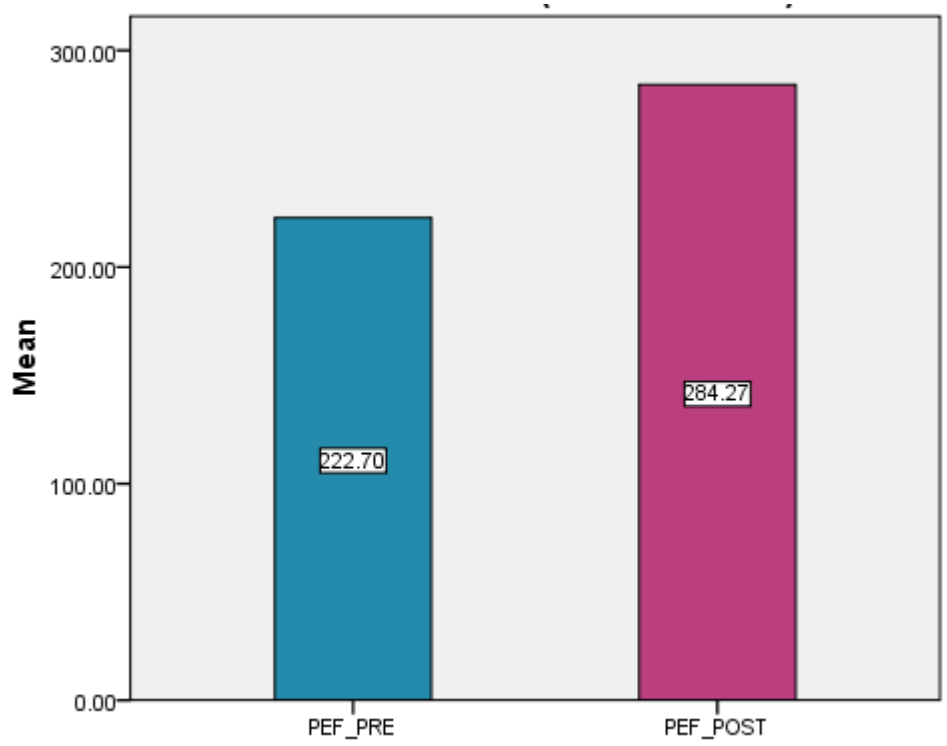


Figure 21. Representation of PEF (Mean) within acupuncture cum backshu (ACB) group

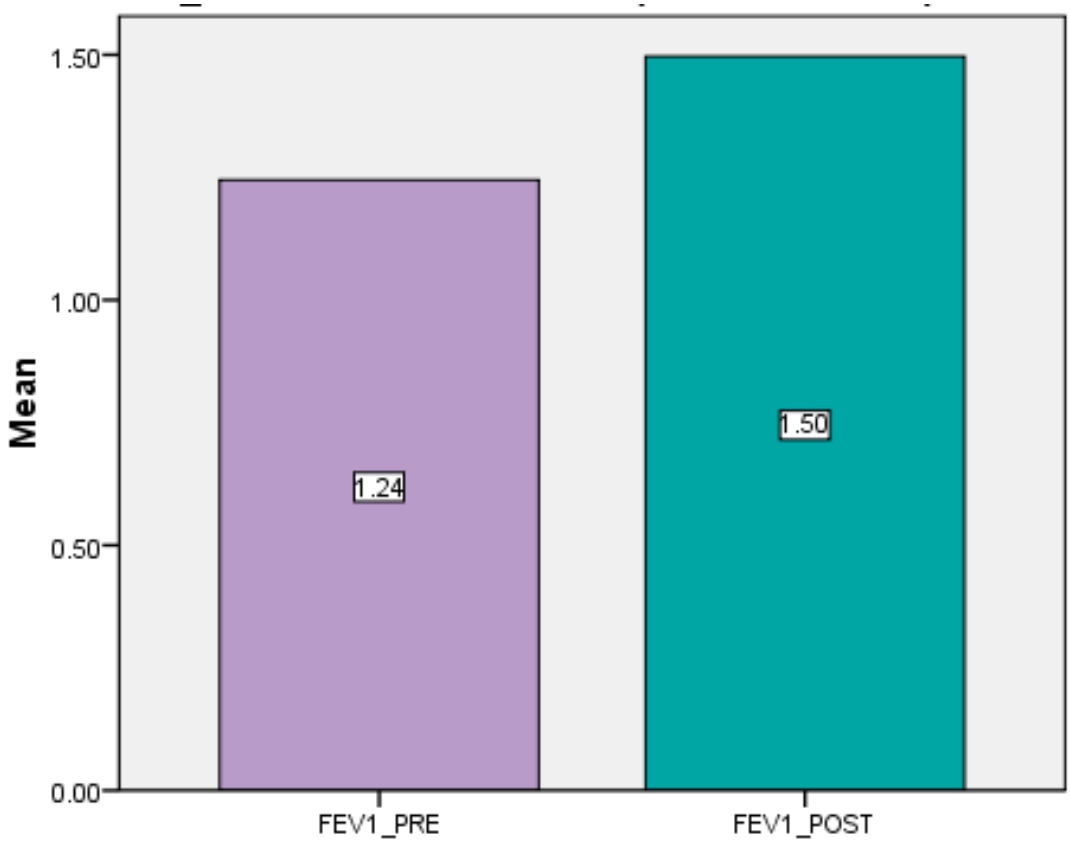


Figure 221: Representation of FEV1 (Mean) within acupuncture cum backshu (ACB) group

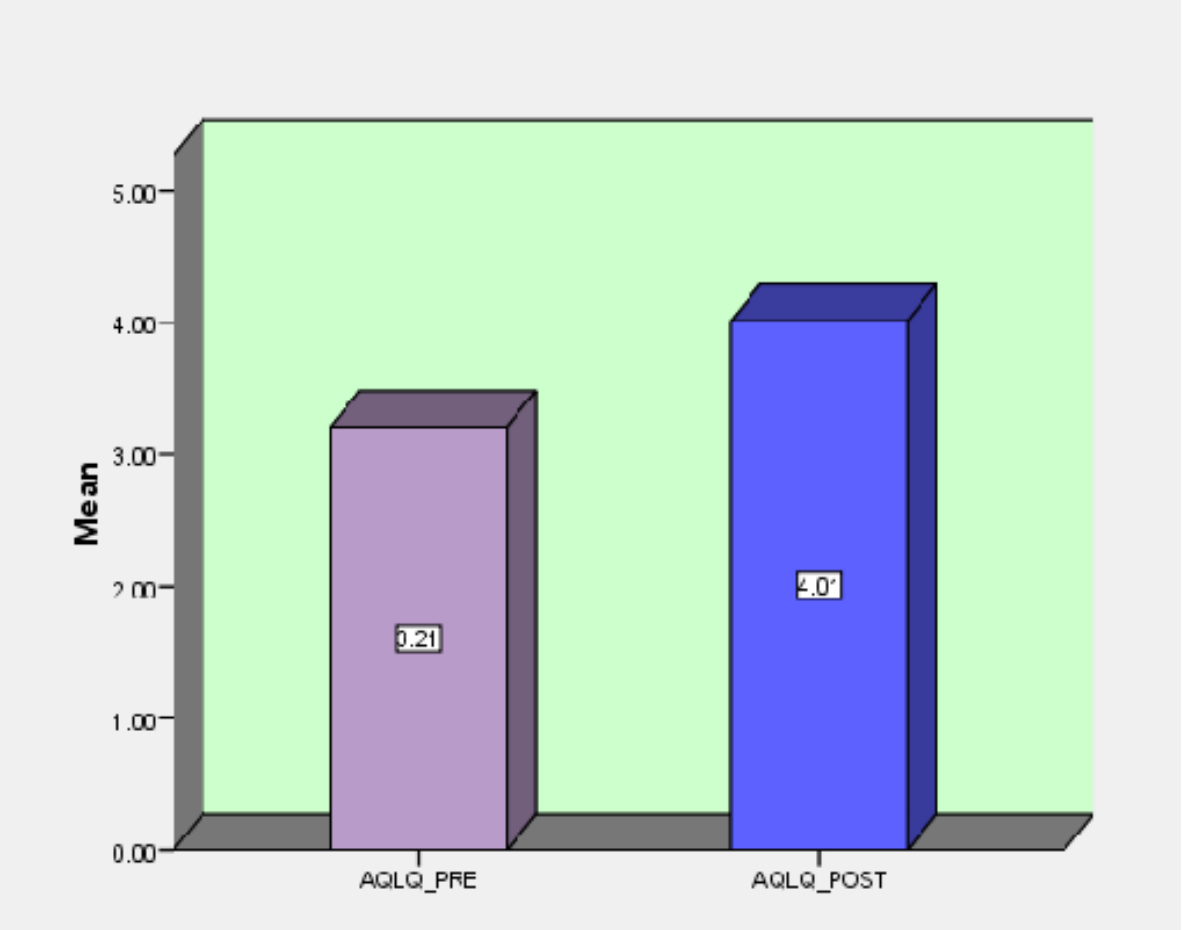


Figure 23: Representation of AQLQ (Mean) within acupuncture group

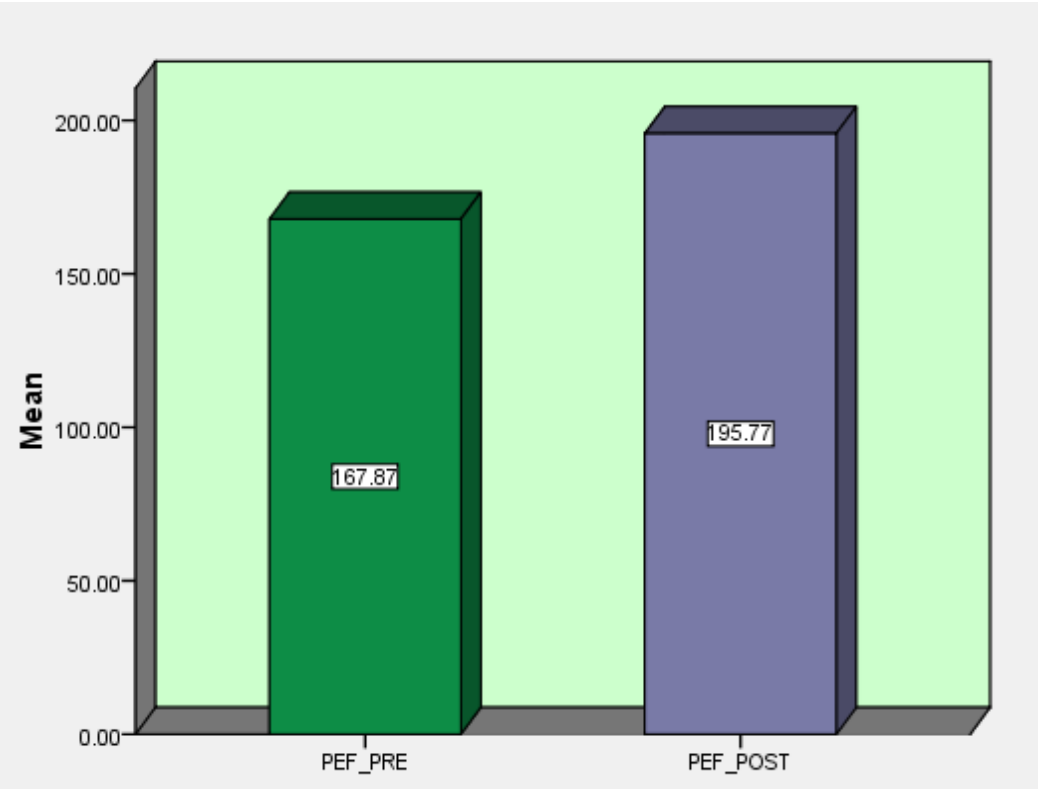


Figure 24: Representation of PEF (Mean) within acupuncture group

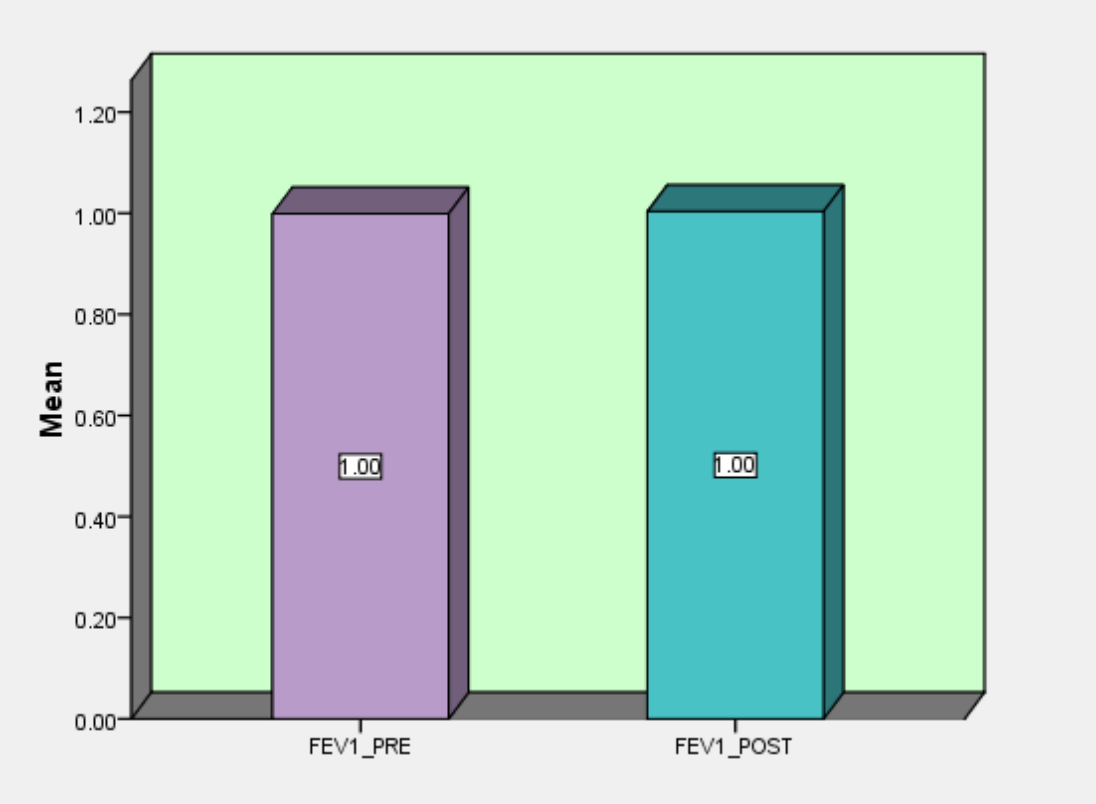


Figure 25: Representation of FEV1 (Mean) within acupuncture group

Table 5. Describes the demographic details of the subjects

Parameters	**Acup Group**	**Acup_Backshu Group**
Age [Mean ± SD]	44.37 ± 8.64	47.1 ± 9.43
Gender distribution	14 Females, 16 Males (n=30)	17 Females, 13 Males (n=30)

Table 5 shows the demographic details of the acupuncture and acupuncture cum backshu groups. The result shows an increase in the Mean and Standard deviation of the acupuncture cum backshu group (47.1 ± 9.43).

Table5: Mean ± Standard Deviation comparison of Acupuncture and Acupuncture cum backshu groups

Variables	**Acup Group**		**P value**	**Acup_Backshu Group**		**P value**
	Mean ± S.D.			**Mean ± S.D.**		
	Pre	**Post**		**Pre**	**Post**	
AQLQ	3.20 ± 0.63	4.01 ± 0.59	0.001	2.83 ± 0.38	4.82 ± 0.56	0.001
PEF	167.87 ± 75.10	195.70 ± 75.61	0.006	223.70 ± 85.84	284.27 ± 83.65	0.001
FEV1	0.99 ± 0.42	1 ± 0.37	0.02	1.25 ± 0.44	1.5 ± 0.37	0.004

Table 6 shows that within the Acupuncture group there is an increase in the mean and standard deviation of post data observation in AQLQ (4.01 ± 0.59), PEF (195.70 ± 75.61) and FEV1 (1 ± 0.37). Within the Acupuncture cum backshu group there is an increase in the mean and standard deviation of post data observation in AQLQ (4.82 ± 0.56), PEF (284.27 ± 83.65) and FEV1 (1.5 ± 0.37).

Table 7: Representation of statistical values between groups

Variables	**P value**
Between groups (AQLQ)	0.001
Between groups (PEF)	0.001
Between groups (FEV1)	0.001

In Table 7 there is enough evidence to show that there is statistically significant change between acupuncture group and acupuncture cum backshu group for the following parameters AQLQ, PEF and FEV1. P values are statistically significant.

DISCUSSION

Asthma is the major health issue Affecting around 4.3 to 6.9% of the population in india. Although there are many interventions to reduce the severity of the disease using bronchodilators and corticosteroids which causes multiple side effects.Acupuncture remains the supportive and adjuvant therapy for most of the affected. In the current study, the effectiveness of acupuncture and backshu acupoint pressure on asthma subjects was compared. Points used to treat control group were UB- 13, LU-5, LU-7, PC-6,and K-3 on pre-asthmatic was compared. Points used to treat study group were same acupoints with backshu pressure. Each point has its own character and action which helps to reduce the severity of disease and improving quality of life of the subject, this has been explained Table 7.

Method adopted to treat Group I was Preselected acupuncture points. On reviewing prior studies on asthma, trials were conducted using only Either acupuncture or backshupoints with acupuncture needles on these points .to my knowledge studies involving acupuncture and backshu pressure treatment were none done.

This study reveals that there is significant increase in mean and standard deviation in both the control and study groups. Although there is significant increase in mean and standard deviation in group I Comparatively ,significance of mean and standard deviation And p value is more in group II that is acupuncture cum backshu group. However no changes were noted in mean value of FEV1 in acupuncture group which

indicates that significance of backshu cum acupuncture treatment is more valuable than acupuncture treatment alone.

There is enough evidence to show that there is statistically significant change between acupuncture group and acupuncture cum backshu group for the following parameters AQLQ, PEF and FEV1. P values are statistically significant.

The researchers note that after the three months of acupuncture treatments, patients had significant improvements in global quality of life scores and individual parameters such as symptoms, activities, emotions, physicality, and mental function. An important finding, the durability of acupuncture was confirmed by a six month follow-up. Despite not having any acupuncture for three months following the completion of the study's treatment regimen, the six month data point measured improvements "comparable to the 3 months' improvements."

However on observing the difference in the mean, SD of pre and post and t value in both groups, Group II showed better improvement than group I. Analysis of physiological parameters among both groups, the observed value between pre and post intensity showed significant changes in both the groups. (Group I <0.0001 and Group II <0.0001]. Though both group treatments among the groups are significant Group II showed better changes than Group I.

CONCLUSION

This study has revealed that both Treatment of acupuncture and backshu point pressure are effective in reducing symptoms of asthma in subjets with the latter more effective comparatively. This study demonstrates accuracy of Acupuncture are more subtle and needs deeper understanding as it is skeptical to implement without proper knowledge. It primarily aims at correcting the imbalances upon the zangfu organs which can cause any illness and can be treated effectively. Clinical Acupuncture though easy and effective in conditions like pain relief, it has limited the effectiveness of Acupuncture in correcting the fundamental imbalances. Further study in a larger sample would enhance accuracy in future.

LIMITATIONS OF THE STUDY

This study has a number of limitations including generalizability. The population of Asthma in both the gender is unevenly distributed in this research which could bias the results. Future studies should use larger sample size, qualitative measurement of Quality of life and Spirometric values.

FUTURE DIRECTION OF THE STUDY

Study can be conducted with larger sample size and to check asthma quality of life questionarie with standard questionaries in asthmatics .

SUMMARY

Bronchial Asthma is a noninfectious chronic, inflammatory disorder of the airway affecting both adults and children in all parts of the world. The world health organization (WHO) estimated around 334 million people in all ages were affected and that more than 15 million disability –adjusted life-years are lost and 250,000 asthma deaths occur around the world annually. Asthma is diagnosed by various symptoms of wheeze, shortness of breath, cough, tightness of chest, and variable expiratory airflow limitations.

Inhaled corticosteroid therapy and bronchodilators are predominantly used medication to treat asthma. But controversy exists about the risk and benefits of using bronchodilator drugs and corticosteroids .So due to the long term use of conventional drugs causing possible side effects, alternative, no risk, non-drug strategies treatment like backshu point massage and acupuncture can be used to reduce the side effects and to improve the lung function for the management of asthma.

60 chronic asthma subjects were randomized into Control Group A (Acupuncture; N = 30) and Study Group B (Acupuncture and Backshu Point Pressure; N= 30) on 1:1 ratio. The Subjects of Group A and Group B received their respective treatment one day. Data was collected before and after treatment using Peak flow meter for PEF And FEV1 Value- and Asthma Quality and Life Questionnaire (AQLQ) .

There was evidence of changes in improvement of pulmonary function on comparing between acupuncture group and acupuncture cum backshu group. Within the acupuncture group showed significant change in the quality of life done using Mini AQLQ (0.001) shown in Table 3. Also shows a significant increase in the PEF ($p<0.006$) and FEV1 ($p<0.02$) in acupuncture group. In the acupuncture cum backshu group significant changes are noted in the post study in quality of life ($p<0.001$) and in the PEF ($p<0.001$) and FEV1 ($p<0.004$) values. Duration of conducting the intervention is a key factor in showing positive changes in the results.

This trial suggested that both Acupuncture and Backshu point pressure are better in reducing asthmatics.

REFERENCES

1. Rai SP, Patil AP, Vardhan V, Marwah V, Pethe M, Pandey IM. Best Treatment Guidelines for Bronchial Asthma. *MJAFI* 2007; **63**: 3.
2. Ortega AN, Gergen PJ, Paltiel AD, et al. Impact of site of care, race and Hispanic ethnicity on medication use for childhood asthma. *Pediatrics*. 2002; **109**: No.1, pp.e1.
3. Factsheet: Asthma – a worldwide problem. Document accessed on September 8, 2005 at website of International Union Against Tuberculosis and Lung Diseases (IUATLD).
4. Aggrawal AN,Chaudhry K,Chhabra SK,D'Souza GA,Gupta D,Jindal SK,Katiyar SK et al.,Asthma Epidemiological Study Group.Prevalence and risk factors for Bronchial Asthma in Indian Adults: a Multicenter Study. *Indian J Chest Dis'Allied Sci* 2006; **48**: 13-22.
5. Clark NM, Brown R, Joseph CL, et al. Issues in identifying asthma and estimating prevalence in an urban school population. *J Clin Epidemiol*. 2002; **55**: *870*-88
6. Greenblatt R, Mansour O, Zhao E, Ross M, Himes BE. Gender-specific determinants of asthma among U.S adults. Asthma Res Pract. 2017;3:2.
7. Forno E, Celedon JC. Health disparities in asthma. *Am J Respir Crit Care*

Med. 2012;185(10):1033–5.

8. Moorman JE, Akinbami LJ, Bailey CM, Zahran HS, King ME, Johnson CA, Liu X.National Surveillance of asthma: United States, 2001–2010, in Vital Health Stat 2012, National Center for Health Statistics.

9. Akinbami, L., J. Moorman, C. Bailey, H. Zahran, M. King, C. Johnson, and X. Liu, Trends in asthma prevalence, health care use, and mortality in the United States, 2001–2010, in NCHS data brief, no 94. 2012, National Center for Health Statistics: Hyattsville, MD.

10. Bracken MB, Belanger K, Cookson WO, Triche E, Christiani DC, Leaderer BP . Genetic and perinatal risk factors for asthma onset and severity: a re-view and theoretical analysis. *Epidemiol Rev* 2002; **24**: 176-189.

11. Finkelstein JA, Barton, MB, Donahue JG, et al Compar-ing asthma care for Medicaid and non-Medicaid child-ren in a health maintenance organization. *Arch Pediatr Adolesc Med* 2000; **154**: 563-568.

12. Global Initiative for Asthma (GINA): Global strategy for asthma management and prevention. Update 2014 and Online Appendix. Accessed 12 Nov 2014.

13. Cheng X, editor. Chinese acupuncture and moxibustion. Foreign Languages Press; Beijing, China: 1987.

14. Kaptchuk TJ. Acupuncture: theory, efficacy, and practice. Ann Intern Med. 2002 Mar 5; 136(5):374–383.

15. Perry,Lacy.(2004-10-12)How stuff works “how hangovers work”archieved 2010-03-15 at the waybackmachine..health.howstuffwork.com.Retrieved on 2011-11-20.

16. from the book: Acupuncture, Meridian Theory and Acupuncture Points

17. Acupuncture. Jama; NIH Consensus Conference; Nov 4 1998; pp. 1518–1524.

18. Jobst K A. A Critical analysis of acupuncture in pulmonary disease: efficacy and safety of the acupuncture needle. *J Altern Complement Med* 1995; **1:57**–85.

19. J. Martin, A.N.A. Donaldson, R. Villarroel, M.K.B. Parmar, E. Ernst, I.J. Higgi nson.,Efficacy of acupuncture in asthma: systematic review and meta-analysis of published data from 11 randomised controlled trials,European Respiratory Journal 2002 20: 846-852; **DOI:** 10.1183/09031936.02.00078702.

20. Mitchell P, Wells JE, Box PO. Acupuncture for chronic asthma: controlled trial with six months follow-up. *Am J Acupunct* 1989; **17:5**–13.

21. Christensen PA, Laursen LC, Taudorf SC, Sorensen C, Weeke B. Acupuncture and bronchial Asthma.*Allergy* 1984;**39**:379–385.

22. Kleijnen J, ter Riet G, Knipschild P. Acupuncture and asthma: a review of controlled trials. *Thorax*1991;**46**:799–802.

23. Takishima T, Mue S, Tamura G, Ishihara T, Watanabe K. The bronchodilating effect of acupuncture in patients with acute asthma. *Ann Allergy* 1982;**48**:44–49.

24. Virsik K, Kristufek P, Bangha O, Urban S. The effect of acupuncture on pulmonary function in bronchial asthma. *Prog Respir Res* 1980;**14**:271–275.

25. Dias PLR, Subramaniam S, Lionel ND. Effects of acupuncture in bronchial asthma: preliminary communication. *J R Sco Med* 1982;**75**:245–248.

26. Ernst-E. Acupuncture–how effective is it really?. *Fortschiritte-der-Medizin* 1998;**116**:20–26.

27. Jobst K A. A Critical analysis of acupuncture in pulmonary disease: efficacy and safety of the acupuncture needle. *J Altern Complement Med* 1995; **1:57**–85.

28. Lancet editorial. Acupuncture, asthma and breathlessness (editorial). *Lancet* 1986; **19:1427**–1428.

29. Glass GV. Primary, secondary and meta-analysis of research. *Educ Res* 1976; **5:3**–8.

30. Kaur S, D. Behera, D. Gupta, S. K. Verma Demographic and Environmental factors in patients of bronchial asthma. Indian J Allergy Asthma Immunol. 2008; 22(2): 85-89

31. Rao S, Rao S, Ashok NC, Jain T, Anuradha R, Muralidhar.Influence of Associated Factors in the Prevalence of Asthma: A Community Based Study in Mysore. J Clin Diag Res 2011, 5: 721-4.

32. Jain A, H. Bhat V, Acharya D. Prevalence of Bronchial Asthma in Rural Indian Children: A Cross Sectional Study from South India. Indian J Pediatr 2010; 77: 31-35.

33. Prasad R et al., A Quesstionnaire Based Study Of Bronchial Asthma in Rural Children of Lucknow Indian J Allergy Asthma Immunol 2007: 21: 15-18.

34. Jindal SK,Gupta D, Aggarwal AN, Agarwal R;World Health Organization; Government of India. Guidelines for the management of asthma at the primary and secondary levels of health care in India. Indian J Chest Dis Allied Sci. 2005; 47:309-43.

35. Dhar H.L Effect of varying blood sugar level in anaphylactic shock. Adv Exp Med Biol 1970; 8: 189-92.

36. Van Ufford NJQ. The blood Sugar level in Asthma .Int Arch Aller Appl Immunol 1952; 3: 23.

37. Abrahamson EH.Asthma diabetes mellitus and hyperinsulinemia. J Clin End Meta.1941; 1: 402.

38. **Kleijnen J**, ter Riet G, Knipschild P. Acupuncture and asthma: a review of controlled trials. *Thorax*1991; **46:799**–802.

39. Linde K, Jobst K, Panton J. Acupuncture for chronic asthma. (Cochrane Review). In: *The Cochrane Library.* Issue 2. Oxford: Update Software, 2001.

40. Fung KP**,** Chow OK, So SY. Attenuation of exercise-induced asthma by acupuncture. *Lancet*1986; **ii: 1419**–22.

41.Tashkin DP, Bresler DE, Kroening RJ, *et al*. Comparison of real and simulated acupuncture and isoproterenol in methacholine-induced asthma. *Ann Allergy*1977; **39:379**–87.

42. Medici T**.** Acupuncture and bronchial asthma. *Forsch Komplementarmed*1999; **6:26**–8.

43. Joos S**,** Schott C, Zou H, *et al*. Immunomodulatory effects of acupuncture in the treatment of allergic asthma: a randomized controlled study. *J Altern Complement Med*2000; **6:519**–25.

44. Zang J. Immediate antiasthmatic effect of acupuncture in 192 cases of bronchial asthma. J Tradit Chin Med. 1990; 10:89–93.

45. Biernacki W, Peake MD. Acupuncture in treatment of stable asthma. Respirat Med. 1998; 92:1143–1145.

46. Joos S, Schott C, Zou H, et al. Immunomodulatory effects of acupuncture in the treatment of allergic asthma: a randomized controlled study. J Altern Complement Med. 2000; 6:519–525.

47. Shapira MY, Berkman N, Ben-David G, et al. Short-term acupuncture therapy is of no benefit in patients with moderate persistent asthma. Chest. 2002; 121:1396–1400.

48. Tandon MK, Soh PF, Wood AT. Acupuncture for bronchial asthma? a double-blind crossover study. Med J Aust. 1991; 154:409–412.

49. Kleijnen J, ter Riet G, Knipschild P. Acupuncture and asthma: a review of controlled trials. Thorax. 1991; 46:799–802.

50. Linde K, Jobst K, Panton J. Acupuncture for the treatment of asthma bronchiale. In: Cates C, Ducharme F, Gibson P, et al, eds. Airways Module of the Cochran Database of Systematic Reviews (updated 03 March 1997) The Cochrane Collaboration; Issue 2. Oxford; 1997.

51. Martin J, Donaldson AN, Villarroel R, et al. Efficacy of acupuncture in asthma: systematic review and meta-analysis of published data from 11 randomised controlled trials. Eur Respir J. 2002; 20:846–852.

52. Park J, White A, Stevinson C, et al. Validating a new non-penetrating sham acupuncture device: two randomised controlled trials. Acupunct Med. 2002; 20:168–174.

53. Birch S. Acupuncture and bronchial asthma: a long-term randomized study. J Altern Complement Med. 2002; 8:751–754.

54. Medici TC, Grebski E, Wu J, et al. Acupuncture and bronchial asthma: a long-term randomized study of the effects of real versus sham acupuncture compared to controls in patients with bronchial asthma. J Altern Complement Med. 2002; 8:737–750.

55. Schnyer RN, Allen JJ. Bridging the gap in complementary and alternative medicine research: manualization as a means of promoting standardization and flexibility of treatment in clinical trials of acupuncture. J Altern Complement Med. 2002; 8:623–634.

56. Jobst KA. A critical analysis of acupuncture in pulmonary disease: efficacy and safety of the acupuncture needle. J Altern Complement Med. 1995; 1:57–85.

57. Gruber W, Eber E, Malle-Scheid D, et al. Laser acupuncture in children and adolescents with exercise induced asthma. Thorax. 2002; 57:222– 225.

58. Wang SM, Kain ZN. Auricular acupuncture: a potential treatment for anxiety. Anesth Analg. 2001; 92:548–553.

59. Sternfeld M, Fink A, Bentwich Z, et al. The role of acupuncture in asthma: changes in airways dynamics and LTC4 induced LAI. Am J Chin Med. 1989; 17:129–134.

60. Guan Z, Zhang J. Effects of acupuncture on immunoglobulins in patients with asthma and rheumatoid arthritis. J Tradit Chin Med. 1995; 15:102–105.

61. Kemper K, Highfield E. When should you consider acupuncture for your patients? Contemp Pediatr. 2002; 12:31–45.

62. Kemper KJ, Sarah R, Mph L, et al. On pins and needles? pediatric pain patients' experience with acupuncture. Pediatrics. 2000; 105(4 pt 2): 941–947.

63. Kathi J. Kemper, MD, MPH,* Mary C. McLellan, BSN, RN, CMT,† and Ellen S. Highfield, LicAc‡, Massage Therapy and Acupuncture for Children With Chronic Pulmonary Disease, (Clin Pulm Med 2004;11: 242–250)

64. Christensen PA, Laursen LC, Taudorf E, Störensen SC, Weeke B. Acupuncture and bronchial asthma. Allergy 1984; 39:379-85.

65. Christensen PA, Laursen LC, Taudorf E, Störensen SC, Weeke B. Acupuncture for asthma patients. Ugeskrift for Laeger 1986; 148:241- 3

66. Pretorius, Etheresia, The role of Alternative and Complementary Treatments of Asthma, **e:** Acupuncture & Electro-Therapeutics Research, Volume 34, Numbers 1-2, 2009, pp. 15-26(12)

67. Fulder, S. 1988. The Handbook of Complementary Medicine, 2nd ed. Seven Oaks: Coronet Books.

68. Yu, D.Y. and Lee, S.P. 1976. Effect of acupuncture on bronchial asthma. Clinical Science and Molecular Medicine; 51(5): 503-509.

69. Fung, K.P., Chow, O.K. and So, S.Y. 1986. Attenuation of exercise-induced asthma by acupuncture. Lancet; 2: 1419-1422.

70. Zwolfer, W., Keznickl-Hillebrand, W., Spacek, A., Cartellieri, M. and Grubhofer, G. 1993. Beneficial effect of acupuncture on adult patients with asthma bronchiale. American Journal of Chinese Medicine; 21 (2): 113-117

71. Kleijnen, J., Riet, G. and Knipschild, P. 1991. Acupuncture and asthma: a review of controlled trials. Thorax; 46(11): 799–802

72. Linde, K and Jobst, K.A. 2000. Homoeopathy for chronic asthma. The Cochrane Library; Oxford: Update Software.

73. McCarney, R.W., Brinkhaus, B., Lasserson, T.J. and Linde, K. 2003. Acupuncture for chronic asthma. Cochrane Database of Systematic Reviews; Issue 1

74. Johns, D.P and Pierce, R. 2007. Pocket Guide to Spirometry. 2nd ed. Australia: McGraw-Hill.

75. Ganong, W.F. 1995. Review of Medical Physiology. 17th ed. London: Appleton and Lange

76. Jamison, J.R., Leskovec, K., Lepore, S., and Hannan, P. 1986. Asthma in a Chiropractic Clinic: A Pilot Study. Journal of the Australian Chiropractors' Association; 16(4): 137-143

77. Canaday, P. and Collins, J. 2004. Asthma. eMedicine [online], Available from http://www.emedicine.com [Accessed 13 August 2006].

78. Global Strategy for Asthma Management and Prevention. [Online]. 2007. Global Initiative for Asthma (GINA). Available from http://www.ginasthma.org. Accessed 20 April 2007

79. National Asthma Council of Australia. 2008. [Online]. Spirometry Handbook: Interpretation of Ventilatory Function Tests. Available from http://www.nationalasthma.org.au. [Accessed 14 March 2008

80. Berkow, R. (Ed.). 1992. The Merck Manual. 16th Ed. New Jersey: Merck Research Laboratories

81. Haslett, C., Chilvers, E.R., Boon, N.H. and Colledge, N.R. (eds.) 2003. Davidson's Principles and Practice of Medicine. 19th ed. Edinburgh: Churchill Livingstone

82. Morris, M.J. and Perkins, P.J. 2005. Asthma. eMedicine, [online]. Available from http://www.emedicine.com [accessed 18 August 2006].

83. Gardner, R.M, Crapo, R.O and Jackson, B.R, 1992. Evaluation of accuracy and reproducibility of peak flow meters at 1,400 m. Chest; 101: 948.

84. Enright, P.L., Lebowitz, M.D. and Cockroft, D.W. 1994. Asthma Outcome Measures Workshop: pulmonary function tests. American Review Respiratory Disease; 149(2): S9-S18.

85. Dekker, F.W., Schrier, A.C., Sterk, P.J., and Dijkman, J.H. 1992. Validity of peak expiratory flow measurement in assessing reversibility of airflow obstruction. Thorax; 47(3): 162-166.

86. Boezen, H.M., Schouten, J.P., Postma, D.S. and Rijcken B. 1994. Distribution of peak expiratory flow variability by age, gender and smoking habits in a random population sample aged 20-70 years. European Respiratory Journal; 7(10): 1814-1820.

87. Lehrer, P.M., Vaschillo, E., Vaschillo, B., Lu, S.E., Scardella, A., Siddique, and Habib, R.H. 2004. Biofeedback Treatment for Asthma. Chest; 126: 352-361.

88. Nielsen, N.H., Bronfort, G., Bendix, T., Madsen, F. and Weeke, B. 1995. Chronic asthma and chiropractic spinal manipulation: a randomised clinical trial. Clinical and Experimental Allergy; 25: 80-88.

89. Waagen, G., Haldermann, S., Cook, G., Lopez, D. and DeBoer, K.F. 1986. Short term trial of chiropractic adjustments for the relief of chronic lower back pain. Manual Medicine; 2: 63-67.

90. Brennan, P.C., Triano, J.J., McGregor, M., Kokjohn, K., Hondras, M.A and Brennan, D.C. 1992. Enhanced neutrophil respiratory burst as a biological marker for manipulation forces: Duration of the effect and association with substance P and tumour necrosis factor. Journal of Manipulative and Physiological Therapeutics; 15: 83-89.

91. Tashkin DP. Bresler DE, Kroening RJ, Kerschnar H, Katz RL. Coulson A: Comparison of real and simulated acupuncture and isoproterenol in methacholine-induced asthma. Ann Allergy 39:379, 1977

92. Gayrard P. Orehek J, Grimaud C. et al: Bronchoconstrictor effects of a deep inspiration in patients with asthma. Am Rev Respir Dis I 1 I: 433. 1975

93. Takishima T, Mue S, Tamura G. lshihara T, Watanabe K: The bronchodilating effect of acupuncture in patients with acute asthma. Ann Allergy 48:44, 1982

94. Virsik K, Kristufek P. Bangha 0, Urban S: The effect of acupuncture on pulmonary function in bronchial asthma. Prog Respir Res 14:271. 1980

95. Yu DYC. Lee SP: Effect of acupuncture on bronchial asthma. Clin Sci Mol Med 5 1503, 1976.

96. Kotsimbos AT[1], Hamid Q., L-5 and IL-5 receptor in asthma, Mem Inst Oswaldo Cruz. 1997; 92 Suppl 2:75-91.

97. QI Li-zhen, HUANG Qin-feng, LIU Li-gong, et al. Treatment of Asthma by Acupuncture. Shanghai Journal of Acupuncture and Moxibustion, 2005, 24(4): 24

98. XU Si-wei (徐斯伟). Observations on Therapeutic Effect of Back-Shu Acupoint in Treatment of Asthma, J. Acupunct. Tuina. Sci. (2008) 6: 32-35 DOI: 10.1007/s11726-008-0032-1

99. Feng JT[1], Hu CP, Li XZ., Dorsal root ganglion: the target of acupuncture in the treatment of asthma., Adv Ther. 2007 May-Jun; 24(3):598-602.

100.] Brinkhaus, Benno, Stephanie Roll, Susanne Jena, Katja Icke, Daniela Adam, Sylvia Binting, Fabian Lotz, Stefan N. Willich, and Claudia M. Witt. "Acupuncture in patients with allergic asthma: a randomized pragmatic trial." The Journal of Alternative and Complementary Medicine 23, no. 4 (2017): 268-277.

101. Wu JH. Effective observation on treating 68 cases of bronchial asthma by acupuncture plus medicine [J]. Clinical Journal of Chinese Medicine, 2016, 8(13): 109-111

ANNEXURE

INFORMATION SHEET

We are conducting a study **"TO DETERMINE THE EFFICACY OF BACKSHU POINT MASSAGE AND CLINICAL ACUPUNCTURE IN CHRONIC ASTHMA: A RANDODOMIZED CONTROL TRIAL**." at Government Yoga and Naturopathy Medical College Hospital, Chennai – 106.

The purpose of this study is to evaluate the efficacy of Backshu point massage and Acupuncture in chronic asthma. We need your participation in this study. Your participation will be valuable for the investigation of the study.

The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time; your decision will not result in any loss of benefit to which you are otherwise entitled.

The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment.

Signature of investigator Signature of participant

Date:

INFORMED CONSENT FORM

Title of the study:

"TO DETERMINE THE EFFICACY OF BACKSHU POINT MASSAGE AND CLINICAL ACUPUNCTURE IN CHRONIC ASTHMA: A RANDODOMIZED CONTROL TRIAL."

Name of the Participant:

Name of the Principal Investigator: Dr. G.Nithya kala.

Name of the Institution: Government Yoga & Naturopathy Medical College, Chennai – 600 106

Documentation of the informed consent

I _____ have read the information in this form (or it has been read to me). I was free to ask any questions and they have been answered. I am over 18 years of age and, exercising my free power of choice, hereby give my consent to be included as a participant in **"TO DETERMINE**

THE EFFICACY OF BACKSHU POINT MASSAGE AND CLINICAL ACUPUNCTURE IN CHRONIC ASTHMA :A RANDODOMIZED CONTROL TRIAL."

1. I have read and understood this consent form and the information provided to me.
2. I have had the consent document explained to me.
3. I have been explained about the nature of the study.

4. I have been explained about my rights and responsibilities by the investigator.

5. I have been informed the investigator of all the treatments I am taking or have taken in the past

_____ months including any native (alternative) treatment.

6. I have been advised about the risks associated with my participation in this study.

7. I agree to cooperate with the investigator and I will inform him/her immediately if I suffer unusual

symptoms.

8. I have not participated in any research study within the past _____month(s).

9. I am aware of the fact that I can opt out of the study at any time without having to give any reason and

this will not affect my future treatment in this hospital.

10. I am also aware that the investigator may terminate my participation in the study at any time, for any

reason, without my consent.

12. I hereby give permission to the investigators to release the information obtained from me as result of

participation in this study to the sponsors, regulatory authorities, Govt. agencies, and IEC. I

understand that they are publicly presented.

13. I have understood that my identity will be kept confidential if my data are publicly presented.

14. I have had my questions answered to my satisfaction.

15. I have decided to be in the research study.

I am aware that if I have any question during this study, I should contact the investigator. By signing this consent form I attest that the information given in this document has been clearly explained to me and understood by me, I will be given a copy of this consent document.

Name and signature / thumb impression of the participant

Name _____ Signature_____

Date_____

Name and Signature of the investigator or his representative obtaining consent:

Name _____ Signature_____

Date_____

MINI ASTHMA QUALITY OF LIFE QUESTIONNAIRE
(ENGLISH VERSION FOR INDIA)
SELF-ADMINISTERED

PATIENT ID: _____

DATE: _____

Please complete **all** the questions by circling the number that best describes how you have been during the **last 14 days as a result of your asthma.**

IN GENERAL, HOW MUCH OF THE TIME **DURING THE LAST 14 DAYS** DID YOU:

	All of the Time	Most of the Time	A Lot of the Time	Some of the Time	A Little of the Time	Hardly Any of the Time	None of the Time
1. Feel SHORT OF BREATH as a result of your asthma?	1	2	3	4	5	6	7
2. Feel bothered by or have to avoid DUST in the environment?	1	2	3	4	5	6	7
3. Feel FRUSTRATED as a result of your asthma?	1	2	3	4	5	6	7
4. Feel bothered by COUGHING?	1	2	3	4	5	6	7
5. Feel AFRAID OF NOT HAVING YOUR ASTHMA MEDICATION AVAILABLE?	1	2	3	4	5	6	7
6. Experience a feeling of CHEST TIGHTNESS and/or CHEST HEAVINESS?	1	2	3	4	5	6	7
7. Feel bothered by or have to avoid CIGARETTE SMOKE in the environment?	1	2	3	4	5	6	7
8. Have DIFFICULTY GETTING A GOOD NIGHT'S SLEEP as a result of your asthma?	1	2	3	4	5	6	7
9. Feel CONCERNED ABOUT HAVING ASTHMA?	1	2	3	4	5	6	7

MINI ASTHMA QUALITY OF LIFE QUESTIONNAIRE
(ENGLISH VERSION FOR INDIA)
SELF-ADMINISTERED

PATIENT ID: _____

DATE: _____

IN GENERAL, HOW MUCH OF THE TIME **DURING THE LAST 14 DAYS** DID YOU:

	All of the Time	Most of the Time	A Lot of the Time	Some of the Time	A Little of the Time	Hardly Any of the Time	None of the Time
10. Experience WHEEZING in your chest?	1	2	3	4	5	6	7
11. Feel bothered by or have to avoid going outside because of WEATHER OR AIR POLLUTION?	1	2	3	4	5	6	7

HOW LIMITED HAVE YOU BEEN DURING **THE LAST 14 DAYS** DOING THESE ACTIVITIES **AS A RESULT OF YOUR ASTHMA**?

	Totally Limited	Extremely Limited	Very Limited	Moderate Limitation	Some Limitation	A Little Limitation	Not at all Limited
12. STRENUOUS ACTIVITIES (such as hurrying, exercising, running up stairs, sports)	1	2	3	4	5	6	7
13. MODERATE ACTIVITIES (such as walking, housework, gardening, shopping, climbing stairs)	1	2	3	4	5	6	7
14. SOCIAL ACTIVITIES (such as talking, playing with pets/children, visiting friends/relatives)	1	2	3	4	5	6	7
15. WORK-RELATED ACTIVITIES (tasks you have to do at work*)	1	2	3	4	5	6	7

** If you are not employed or self-employed, these should be tasks you have to do most days.*

DOMAIN CODE:

Symptoms: 1, 4, 6, 8, 10
Activity Limitation: 12, 13, 14, 15
Emotional Function: 3, 5, 9
Environmental Stimuli: 2, 7, 11